Teachers Talking About Their Epics

Near misses in outdoor education

A thesis
submitted in partial fulfilment
of the requirements for the degree of
Master of Applied Science
at
Lincoln University

by

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Lincoln University
1999

ABSTRACT

Abstract of a thesis submitted in partial fulfilment of the requirements
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This study examines incidents with high potential for serious harm (HIPO incidents) which occurred in Rotoiti Lodge Outdoor Education Centre programmes. Through the use of qualitative techniques, the research explores definitions and meanings of key terms (accident, incident and epic); examines accounts of eleven HIPO incidents; considers effects the events had on those involved; identifies possible causes of the incidents and structures these into recognised models of analysis; investigates what people did about an event afterwards; and determines suitable procedures for reporting and analysis which would benefit a school's risk management plan.

The results of the research affirm that HIPO incidents are meaningful events for teachers and instructors that experience them and that they have significance for safety and preventive purposes. Consistent with industrial research, incidents were shown to have multiple causes over a number of stages and most could be traced back to factors which management had control over. For example, a shortage of skilled and experienced outdoor staff was found to contribute to many incidents in the study.

Additionally, HIPO incidents were processed both formally and informally after an event. Helpful procedures included formal debriefs, talking to family and friends, self reflection and recording it. Schools would do well to provide a no-blame forum for events to be discussed and appropriate remedial action planned at the conclusion of each outdoor education camp.

This thesis contends that due to the current focus on adventure activities in outdoor education, economic pressures and an analogous increase in professionalism and safety standards in the outdoor industry, outdoor education in New Zealand schools is in a process of transition. Elements of this have important implications for the management paradox between safety and risk. Schools need to re-evaluate their current resource allocation toward outdoor education programmes to ensure that staff have adequate experience for their responsibilities and programmes meet current industry standards.

Key words

Incident, high potential incident (HIPO), epic, accident, contributing causes, outdoor education, adventure education, risk, risk management, safety, Rotoiti Lodge Outdoor Education Centre, schools, accident prevention, incident analysis, outdoor leadership, leader competence, teacher, outdoor instructor.

ACKNOWLEDGEMENTS

First and foremost I want to thank my husband Peter Simpson for his support during this long project. His patience and practical help with computer dramas was invaluable and companionship on numerous short outdoor trips was a great source of replenishment.

My research supervisors, Dr Pat Devlin and Pip Lynch provided valuable guidance and advice when appropriate. I extend special thanks to Pat Devlin for support and guidance through difficult times and for instilling the confidence in me that I could do it. Thanks also to Drs. Tracy Berno and Kevin Moore for providing helpful supervision with designing the research methods for the study.

Conducting research off campus has been a particularly isolated journey, made easier by the companionship (often electronic) of fellow researchers and friends. Mike Boyes, Martha Bell, Chris Knol and Gerald Rawson have provided critical feedback and input at key stages of the study. Other friends and colleagues who have been particularly encouraging throughout the project are Jill Dalton, Mark Bagnall and Jan Nisbet. Enormous appreciation is expressed to all of you.

I also extend my gratitude to Rotoiti Lodge Outdoor Education Centre staff, Trustees and constituent schools, without whose support, this study would not have been possible. Thank you to the Trust for granting me 18 months study leave and approving the project to take place at the Lodge. John Tait and John Rogers were particularly supportive and encouraging. I especially thank my colleagues John Campbell and Carol Shand for professional support and assistance throughout the project. I am extremely grateful to interview and focus group respondents from the schools, who sacrificed their precious time amid numerous camp responsibilities to be involved in the study. Their contribution was of inestimable value to this project and outdoor education research in this country. Thank you for sharing your experiences and thoughts with me.

Finally, I am indebted to my current employer, the Central Institute of Technology, for granting study leave and providing technical support and resources for this research.

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CHAPTER ONE Introduction

1.1 From professional interest to risk management research

This study arose from my experience as a specialist outdoor educator working in a school-based outdoor education centre where occasional 'near miss' incidents were a part of my outdoor lifestyle and work. I wished to learn more about these memorable and often turgid experiences. My interest was two-fold. To explore meaning/s for those who experienced them, thereby discovering what place these events occupied in the outdoors culture of New Zealand. I also wished to examine the anatomy of a near miss, deconstructing it to see if analysis could indicate how to avoid similar events.

A leading topic in outdoor leadership training and debate over the past decade was risk management in the outdoors. Where outdoor leaders had responsibility for others, there lay great responsibility, both for the leader and the organisation in which they worked or volunteered. Although adventure tourism had taken off in New Zealand in the 1990's, schools still provided the majority of this country's outdoor education experiences. Several deaths during outdoor programmes here and overseas gained high profile coverage in the media and outrage from the community in recent years. Parents who sent their children on school camps were almost completely trusting, yet the level of care provided did not always match the level of trust held by parents, in my view.

1.1.1 Development of the research idea

As an outdoor education programme manager, I was constantly surprised by the number of incidents that occurred, yet fascinated by the lack of recognition they received. The culture was one of 'We all got back safely' and 'We've been lucky, we've never had a serious accident'. Some incidents from previous trips were re-told as epic adventures, yet I was aware that some were potentially serious. Story telling may be part of the educative process, with listeners learning something of how to avoid similar incidents and/or a platform for the teller to gain hero-status.

Due to the Health and Safety in Employment (HSE) Act (1992) and other statutes, accountability for those in the outdoor recreation profession had never been higher. This added to the 1990's thrust toward increasing standards and professionalism in outdoor leadership. The HSE Act required that a register be kept of *'Every accident that harmed (or, as the case may be, might have harmed)'* (p.17) employees or other people in the workplace, with systems in place for their investigation and analysis. It was therefore important to evaluate methods for incident reporting and analysis in outdoor education, providing further rationale for the focus of the study.

In the late 1980's I was involved in developing the Risk Management Training and Assessment Scheme, a Department of Education initiative to provide Education Outside the Classroom (EOTC) teachers with training courses in risk management. This led to my being contracted by the New Zealand Mountain Safety Council to write a manual to complement the courses (Haddock, 1993a) which heightened my awareness of safety and risk management issues.

So during my employment as Resident Teacher at Rotoiti Lodge Outdoor Education Centre from 1991 to 1997, I overhauled safety procedures. This process was both demanding and enlightening. There were few templates and little time and resources allocated by my employers to accomplish necessary tasks. I suspect most schools were in a similar situation, perhaps worse off, as many staff would have had little or no formal training in safety management. To aid the process and as part of a postgraduate qualification, I carried out several research projects which provided baseline data and information to develop safety management systems and procedures at the Lodge, and led to the current study.

The first project was to set up incident and accident reporting procedures, to provide a database from which to plan our safety strategy and comply with the HSE Act. In analysing the results, I found where the majority of incidents were happening, in what locations, activities, and with which groups. Types of injuries were revealed as were common causes of events. Also, many of the factors contributing to incidents indicated a lack of judgement on the part of the leader of the activity. This was also found to be a

leading cause of accidents in outdoor adventure programmes (Meyer, 1979) as sound judgement based on experience was critical to safety in the outdoors (see section 3.6).

Consequently, in the second project I surveyed staff who came to Rotoiti Lodge to assist with camps, to evaluate their outdoor and leadership experience (Haddock, 1994). Compared with the national benchmarks set for voluntary bush craft instructors, teachers who assisted on camps at the Lodge did not always have adequate logged experience for leading tramps, which was an inherent risk in the programme. Of particular concern were winter tramps and those that ventured above the bushline.

Several incidents in the hoard of information I collected each year struck me as significant. The incidents evoked feelings of "that was lucky ...whew! we got away with that", but did not stand out from the page. I sensed that these incidents were critical to safety. Studying a large number of incidents over time gave a breadth of analysis that helped improve programme safety in certain areas. But I suspected studying a smaller number of significant events may give a depth of analysis not achievable in the broader study, revealing different insights to improve safety. The literature agreed (see section 1.3), providing impetus for the current study.

My initial research questions related to my inter-twined interests in researching 'near misses' outlined earlier. How did teachers and instructors interpret these events? Did they see them as significant and potentially dangerous? What did they do about them afterwards, if anything? Why were they integrated into the folklore as epic adventures when often those involved were traumatised or shaken by the experience? How did one distinguish these events from adventures or an insignificant incident? Was this possible? Could a near miss be analysed to determine causes and preventive strategies? As my research proposal crystallised, a more formal set of research aims and objectives were developed (see section 1.6).

1.2 Definitions of terms

Terms used in this study are now defined. Section 1.2.1 includes commonly accepted nominal definitions based on the work of recognised experts in the fields of adventure

education and safety management. Section 1.2.2 contains operational definitions for the purposes of this paper.

1.2.1 Nominal definitions

An **accident** is an undesired event which results in personal injury, property damage or loss (Bird and Germain, 1992; Kauffman, 1989).

An **incident** is an undesired event which, under slightly different circumstances, could have resulted in personal injury, property damage or loss. This study is concerned with incidents with high potential for serious or major loss **(HIPO incidents)** (Bird and Germain, 1992; Johnson, 1980).

Risk is the potential to lose something of value. The loss may be physical, mental, social or financial. The presence of risk creates uncertainty (Miles and Priest, 1990; Priest and Baillie, 1987).

There are three possible values for risk according to Priest and Baillie (1987). **Absolute risk** was the uppermost limit of risk inherent in a situation, with no safety controls present. **Real risk** was the amount of risk present, once adjusted by safety controls. **Perceived risk** was an individual's assessment of the real risk present. This differed from person to person and may not be related to the real or absolute risk.

Safety means freedom from danger or risks (Allen, 1990) through the control of accidental loss (Bird and Germain, 1992).

Risk management refers to those collective procedures utilised to keep risks and losses within an acceptable range (Priest and Dixon, 1990).

Outdoor education is a broad term used to describe education which primarily takes place in the natural environment (McRae, 1992; Priest, 1990).

Education outside the classroom (EOTC) is a term used extensively by New Zealand schools in the same broad sense as outdoor education above (Abbott, 1990).

An **adventure** is an experience where the outcome is uncertain because key information is missing, vague or unknown (Ewert, 1989a; Priest and Baillie, 1987).

Adventure education is based on activities which create challenge and excitement by deliberately exposing participants to elements of risk (Ewert, 1989a; Hayllar, 1992; Miles and Priest, 1990).

Processing in the context of this study refers to actions undertaken as a result of an incident. Actions may range from report writing and formal debriefing with colleagues and others, to informal discussion of the event by talking to peers or diary writing (Nadler and Luckner, 1992; Knapp, 1990).

1.2.2 Operational definitions

Resident Teacher: A specialist outdoor educator employed by the Lake Rotoiti Outdoor Education Trust to manage Rotoiti Lodge Outdoor Education Centre programmes and instruct and lead groups in technical outdoor activities such as abseiling, high ropes elements, canoeing, caving, tramping and snow craft.

Liaison Teacher: A position of responsibility designated to a teacher within each constituent school, involving the co-ordination of all camps at Rotoiti Lodge and liaison with Lodge resident teachers to negotiate and provide a suitable programme.

Teacher: A qualified teacher who accompanies a school group to the Lodge, leads less technical activities and assists with other activities. This person is not necessarily an experienced outdoors person.

Outdoor Educator: A qualified teacher who accompanies a school group to the Lodge and leads or co-leads outdoor activities. This person is an experienced and often qualified outdoor professional.

Instructor: An experienced and often qualified outdoor professional, employed by the Lodge or school to assist in the leading and co-leading of outdoor activities.

Assistant: A person who voluntarily accompanies a school group to the Lodge and assists qualified teachers or instructors with supervising activities and/or helps in the kitchen. This person is not necessarily an experienced outdoors person and could be a parent, tertiary student on placement or other volunteer.

1.3 Accident and incident research

There is a vast literature on the study of industrial accidents and incidents (Bird and Germain, 1992; Dwyer, 1991; Johnson, 1980; Kates, Hohenemser and Kasperson, 1985). Some authors saw the usefulness of this research for outdoor safety (Davidson, 1992; Haddock, 1993a; Kauffman, 1989; Meyer, 1979).

1.3.1 Industrial research

Bird and Germain's (1992) accident ratio study[1] (see Figure 1.1 below) suggested that accidents which resulted in serious injury were just the tip of an iceberg. This analysis of industrial events found that for each serious injury or fatality there were ten minor injuries, thirty cases of property damage and six hundred incidents with no visible injury or damage (a 1:10:30:600 ratio). They concluded that since there were so many more incidents than accidents, organisations would be unwise to concentrate only on the few, serious accidents as much could be learned from incidents.

Authors (Bird and Germain, 1992; Johnson, 1980; O'Shell and Bird, 1969) pondered, do minor incidents predict major accidents? They reported Heinrich (pioneer in industrial safety c1959) drew attention to the high ratio of minor to major events, urging attention be given to the numerous incidents. But Johnson (1980) argued that the principle was misapplied if all incidents were lumped together. He reported that as early as 1940, a National Safety Council (USA) study in the electric utility industry pointed out that minor injuries (bumps, bruises, minor cuts, and dust in the eyes) did not focus on causes of

[1] This study analysed nearly two million events reported by 300 companies involving two million employees who worked three billion person hours (Bird and Germain, 1992).

electric shock fatalities. Thus many minor injuries were unrelated to major accidents. Johnson concluded the minor to major event relationship had preventive values primarily within a specific type of event. Others agreed (Bird and Germain, 1992; Johnson, 1980; O'Shell and Bird, 1969) that 'near misses' with high potential for serious harm, were predictive of serious accidents in ways that typical first-aid cases were not. Thus, 'HIPO' incidents should be investigated as thoroughly as accidents (Bird and Germain, 1992).

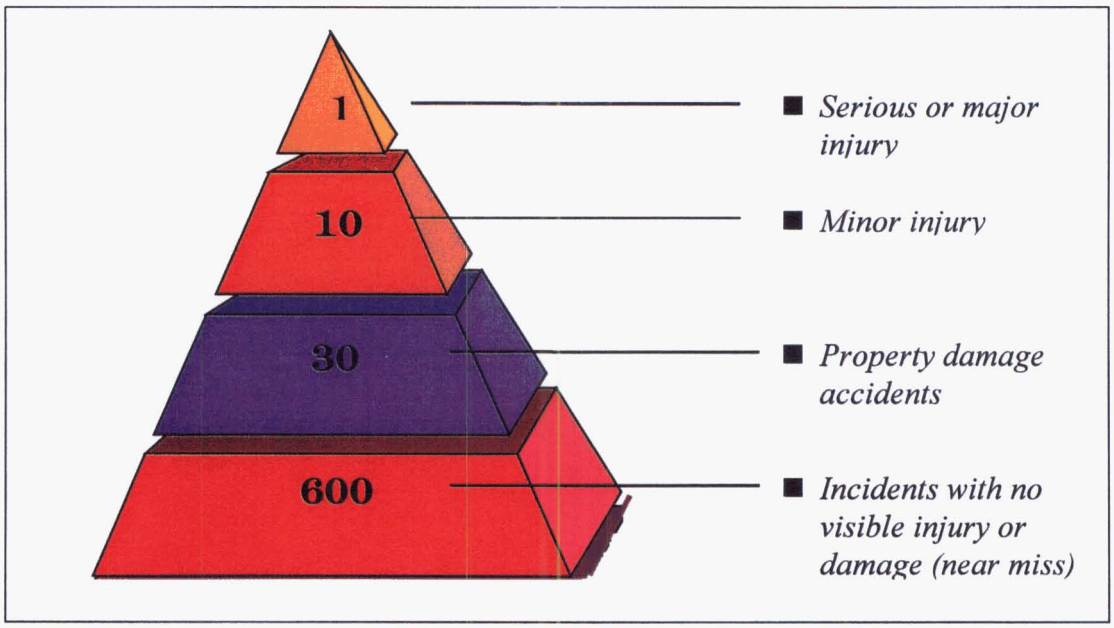


Figure 1.1 Accident ratio study (Bird and Germain, 1992, p. 21).

Hale (1989) advocated that outdoor programme leaders should also take note of these events. He described four important indices of close calls, those involved:express relief, often through exaggeration and humour; often do not identify it as a true accident and do not report it formally; therefore no analysis is made; no analysis means no intervention to stop or alter the close-call circumstance, tending to promote a recurrence, often with escalating seriousness. Hale suggested information learned from a close-call should be documented, analysed and networked among peers in that and other programmes.

HIPO incidents were shown to be related to accidents in that they had similar causes (Bird and Germain, 1992; Hale, 1989; Johnson, 1980; Kates, Hohenemser and Kasperson, 1985; Kauffman, 1989). Yet incidents went grossly under reported (Dwyer, 1991; Hale, 1989; O'Shell and Bird, 1969) and were even *'shrouded by a veil of silence'* (Dwyer,

1991, p.6). HIPO incidents differed from accidents in that no injury or damage resulted. But the type and degree of loss were a matter of chance, depending partly on fortuitous circumstances and partly on the actions taken to minimise the loss (Bird and Germain, 1992). Consequently, the effect could range from insignificant to catastrophic, from a scratch or dent to multiple fatalities or loss of plant (equipment or buildings).

1.3.2 Determining significant events

Delineating high potential 'near-miss' incidents from minor accidents and incidents with no relationship to major accidents, posed a challenge. Johnson (1980) highlighted the importance of *'the professional scan of minor injury reports and property damage reports ... to bring to light cases of potentially great significance.'* (p. 371). This relied on the input of someone with expertise in safety and the particular industry.

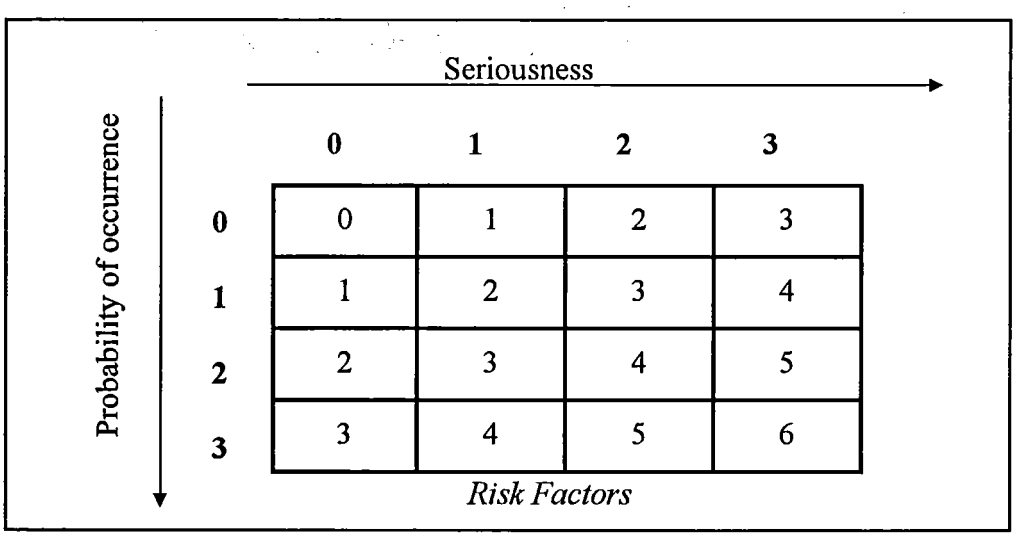


Figure 1.2 Risk assessment model. (Albrighton, 1993, p.18).

DESCRIPTORS FOR MODEL

Probability Ranking Points:		*Seriousness:*	
0	*Very unlikely*	*0*	*Of no consequence*
1	*Slight possibility*	*1*	*Marginal*
2	*Medium possibility*	*2*	*Quite serious*
3	*Highly possible*	*3*	*Catastrophic*

Probability Points + Seriousness Points = Risk Factor

Several tools have been developed to assist the professional in this endeavour. Albrighton's (1993) risk assessment model (Figure 1.2 above) is one such tool. It ranks the probability and seriousness of events in order to produce a risk factor. Thus the significance of an individual event is estimated.

Albrighton (1993) recommended that incidents with a risk factor of three or more should generate further investigation, analysis and corrective action. Incidents with a risk factor of three or more were the focus of this study. Albrighton's model was used to attain scores.

1.3.3 Accident and incident analysis

Accidents and (by implication) 'HIPO' incidents were generally never the result of a single cause. They were the result of a mixture of events and factors which built up over time and combined under just the right circumstances to cause an accident or 'HIPO' incident (Bird and Germain, 1992; Raffan, 1984). Since multiple causes took time to evolve, it followed that there were multiple opportunities to predict accidents by identifying the antecedental causes and intervening to prevent the accident.

Researchers identified stages of accident causation, signalling possible intervention points. Bird and Germain (1992) identified immediate, basic and lack of control causes, showing most accidents could be traced back to lack of management control factors. Similarly, Kates *et al* (1985) structured accidents into a causal sequence. Additionally, they identified 'pathways' for intervention between each stage, concluding that the earlier the intervention occurred, the greater were the preventive benefits. Although the trend in accident analysis was to reduce and simplify events into a linear sequence, researchers (Bird and Germain, 1992; Johnson, 1980; Kates *et al*, 1985) acknowledged that accidents were complex events and more tree or web like than linear. Fault tree analysis is a recognised technique which shows this type of structure (Johnson, 1980).

Other authors (Helms, 1984; Kauffman, 1989; Raffan, 1984) saw the importance of recognising the 'lemons' or 'accident chain' before an accident occurred in the outdoors. Lemons were causal factors which, if left unchecked, could lead to an accident (Raffan, 1984). An accident chain was a series of events which, when viewed in retrospect, led to

an accident (Kauffman, 1989). These authors highlighted the significance of the HIPO incident in affording an opportunity to analyse an incident without a death or serious injury necessitating the process.

Philipchalk (1995) highlighted the hindsight bias, '*our tendency, in looking back, to overestimate our ability to foresee actual consequences*' (p.143). So while retrospective analysis of contributing factors to events may be useful for preventive purposes, leaders and researchers may overestimate people's ability to pre-empt accidents by spotting such factors during normal operation.

1.4 Contributing causes

The literature highlighted common and significant causes of accidents and incidents in the outdoors. Helms (1984) reported two studies that found that accepting increased levels of risk contributed to most accidents. He concluded that risk shift, get-home-itis and familiarisation with the situation were the three largest contributing factors to accidents. Risk shift was the phenomenon where groups made riskier decisions than the individuals that comprise them (Freedman, Carlsmith and Sears, 1970 *cited in* Allen, 1980). Get home-itis was trying to adhere to a schedule or forgetting everything else once the end was in sight. Familiarisation with the situation was when experienced people who knew the territory, had a reduced perception of the actual risks present.

Table 1.1 Principal causes of major accidents in adventure programmes (Meyer, 1979, p. 11).

Unsafe conditions	Unsafe acts	Errors of judgement due to:
Swift water	**Poor position**	**Unexpected or new situation**
Loose rock	**Unauthorised procedure**	**Desire to please others**
Inadequate area security	**Unsafe speed**	**Misperception**
Unexpected water/ improper clothing	**Inadequate water/ nutrient intake**	**Fatigue/ distraction**

Meyer (1979) found that the majority of accidents in adventure programmes were the result of a combination of any of the following: an unobserved or underestimated unsafe condition, an unsafe act on the part of a student or an error of judgement on the part of staff. These factors are illustrated in Table 1.1 above.

Haddock (1996a) identified wild card factors in some HIPO incidents. These factors were characterised by their unpredictable nature and usually inhered in the colleagues or students a leader was working with. For example, behaviour which took them by surprise and put them in a reactive mode, often without all the information.

1.5 Approaches to accident and incident research

Industrial and outdoor studies alike mainly concentrated on quantitatively analysing the number and types of events which occur and determining possible contributing factors (Bird and Germain, 1992; Haddock, 1993b; Federated Mountain Clubs of New Zealand, *cited in* Johnston, 1989; Meyer, 1979; Peart, 1991). Most studies of accidents in outdoor programmes relied on using pre-existing data. Such studies provided useful information, but researchers reported limitations of the approach, given the varied quality and availability of data (Meyer, 1979; Peart, 1991).

Bird and Germain (1992) contended that accident statistics were not in themselves a reliable indicator of the degree of risk in an organisation. They maintained that just because an organisation had a favourable frequency rate today, did not mean it could not have a disaster tomorrow. Some industrial researchers (Dwyer, 1991; O'Shell and Bird, 1969) incorporated qualitative methodology into their approaches. Dwyer (1991) studied the social context surrounding industrial accidents and incidents using a case study approach to assist in the analysis of the complexity of accident causation. He, along with Bird and Germain (1992), found incident records to be incomplete in the workplaces they studied, and accidents and incidents to be grossly under-reported and in some cases misreported. Dwyer argued that a case study approach overcame many disadvantages of relying solely on available secondary data. Where data were missing he could access further information through interviews and observation. He could also ascertain the extent of misreporting and under-reporting.

In summary, the research showed the following. Studies investigating accident causation in industrial and outdoor settings focused on available records of accidents where losses had occurred. Although recognised as important for preventive purposes, research on near misses was invisible in the literature, probably due to a lack of information. Researchers indicated that qualitative techniques may overcome problems of relying on absent or inadequate secondary data. Consequently I chose qualitative techniques for this research, to elicit information about HIPO incidents in the social context of outdoor education. I used interviews, focus groups and pre-existing incident records to gather data, which are explained fully in Chapter Two. The study had the following aims and objectives.

1.6 Research aim and objectives

The literature reviewed suggested that the investigation of incidents with high potential for serious loss had significance for safety and preventive measures. The aim of this research was to investigate high potential incidents which occurred in Rotoiti Lodge Outdoor Education Centre programmes and the actions that resulted. In doing so, I aimed to ascertain meanings of events for those involved and elucidate suitable mechanisms for their reporting and analysis. To achieve these aims, the research had the following objectives:

a) To elicit at least ten first hand accounts of high potential incidents that teachers and instructors have experienced whilst leading or co-leading groups of students.

b) To describe meanings of HIPO incidents for respondents including definitions meaningful to them, effects events had on those involved, and determining the significance of events for them.

c) To describe possible causes of each incident as identified by respondents and contained in incident records, to ascertain patterns common to several incidents and to structure these using recognised models of analysis.

d) To investigate how (or if) HIPO incidents were processed by describing what people said and did about it, if anything, afterwards.

e) To elucidate procedures for incident reporting and analysis (formal and informal) and determine which would be beneficial to a school's risk management plan.

1.7 The significance and implications of the research

This research will increase understanding of incidents that have occurred in outdoor education programmes at Rotoiti Lodge and provide insights into reporting and analysis procedures for outdoor education. The research may be useful for outdoor education policy-makers and administrators, particularly the Lake Rotoiti Outdoor Education Trust Board and Boards of Trustees of Rotoiti Lodge's constituent schools, who have ultimate responsibility for student safety. It may assist Resident Teachers, instructors and school teachers working in the programmes by improving understanding of factors which contribute to high potential incidents, indicate suitable procedures for analysing them, and offer guidance for improving programme safety.

The results of this study will add to the body of research into outdoor education accidents and incidents. The research is particularly relevant in the context of the New Zealand Health and Safety in Employment Act (1992), whereby the reporting of significant accidents and near accidents to the authorities is mandatory. The research will assist schools to comply with the Act by identifying suitable procedures for incident analysis in outdoor education. The study will also indicate directions for future research into safety in school outdoor programmes. Finally, the increasing interest and demand for public accountability in respect of safety in adventure programmes makes this research timely.

1.8 Limitations of the research

This is an in-depth contextual study of high potential incidents which have occurred at Rotoiti Lodge Outdoor Education Centre, so it therefore has limitations. If the respondent group is found to be different from teachers and instructors who assist with outdoor education programmes elsewhere in the country or if the setting differs significantly from elsewhere in the country, then the results of this study may not be widely generalisable. This can be tested in future studies. The study was also limited by dependence on respondent co-operation, honesty and memory issues.

1.9 Thesis structure

In Chapter One I explained the development of the research idea, defined terms and concepts associated with the research, examined accident and incident causation and research, approaches taken to study incidents and accidents and outlined the research aim and objectives. I also explained the significance, implications and limitations of the research. In Chapter Two I describe the theoretical perspective, setting and my research methods. I discuss ethical considerations and explain data analysis procedures. In Chapter Three I define outdoor education, examine the history of outdoor education in New Zealand and place Rotoiti Lodge within this context. I also discuss outdoor leadership competence and its relationship to safety in outdoor education. Finally, I explore attempts to determine society's acceptance and tolerance of risk. These topics establish the context for the substantive chapters that follow. In Chapter Four I compare accepted definitions of recognised experts, with respondents' own definitions of an accident, incident and epic. Subsequently I revise accepted definitions of accident and incident in the New Zealand outdoor education context. I also define an outdoor epic, as previously none existed. From this work, I distil meanings of HIPO incidents for teachers and instructors of outdoor education. In Chapter Five, I examine the effects of HIPO incidents on those involved. In Chapter Six I introduce Albrighton's (1993) risk assessment model for determining the significance of an event and present and discuss results of its use in the study. In Chapter Seven I examine how HIPO incidents were processed formally and informally and which processes and settings were conducive or non conducive to constructive reflection on an event. I also examine the extent to which knowledge gained from an event was transferred to prevent similar events in the future. In Chapter Eight, I analyse contributing factors to HIPO incidents. Finally, in Chapter Nine I draw together the argument and conclude that HIPO incidents are indeed meaningful events for teachers and instructors who experience them whilst leading groups of students in the outdoors. They have significance for improving safety in outdoor education and therefore schools would do well to encourage and provide a 'no blame' forum for the events to be discussed and appropriate action planned at the conclusion of each outdoor education camp or activity.

CHAPTER TWO Methods

2.1 Introduction and theoretical perspective

Previous research focused on accidents rather than incidents. Accident research was mainly quantitative in approach, providing a broad analysis of accident type, causes and frequency, rather than the meanings associated with the experience. I wanted to take an in-depth look at incidents with high potential for harm, for which few official records existed and little research had been done, rendering them less visible in the literature than accidents. Hence the adoption of qualitative research because:

> *...qualitative research is often the most 'adequate' and 'efficient' method for obtaining the type of information required and for contending with the difficulties of an empirical research situation* (Glaser and Strauss, 1970, p.289).

Primarily, I wanted to know the meanings of the HIPO incident experience for those involved and how the event was dealt with afterwards. A symbolic interactionist approach was most appropriate to elicit this information as it concentrates on studying human action:

> *The action consists of the multitudinous activities that the individuals perform in their life as they encounter one another and as they deal with the succession of situations confronting them* (Blumer, 1969, p. 6).

Significantly, the approach also recognises that,

> *people act toward things on the basis of the meaning that these things have for them [so]... if the scholar wishes to understand the action of people it is necessary for him (sic) to see their objects as they see them* (Blumer, 1969, p. 51).

This theoretical perspective had profound methodological implications according to Blumer (1969). First it required the researcher to be positioned in the relevant setting. Second, to find objects of central concern, a set of relevant observations were needed. Blumer argued these were rarely produced by questionnaires, scales, surveys or other methods using pre-determined variables. Rather, descriptive accounts were required from actors, of how they saw the objects, how they acted toward them in a variety of situations and how they referred to objects when talking with members of their group. Blumer addressed problems and solutions with the approach. How could the testimony of individual informants and the interpretation of the researcher be relied upon?

> *the depiction of key objects that emerge ... should be subject to probing and critical collective discussion by a group of well-informed participants in the given world. This latter procedure is a 'must' to guard against the admitted deficiencies of individual accounts ... [additionally] scholars ... are prone to assume that other people see the given objects as they ... [so] need to guard against this proneness and give high priority to deliberate testing of their images* (Blumer, 1969, p.52).

I took an interactionist approach in this study, choosing in-depth interviews and focus group discussions as primary means of gathering data. I used focus group discussions to counter the deficiencies of individual interviews and researcher bias identified above, providing triangulation of methods and giving rigour to the research. Methods are discussed in detail in section 2.8.

2.2 Validity and reliability issues

Memory deteriorates with time elapsed (Cohen, 1989), but no guidance for how much time elapse resulted in deterioration was found in the literature. So, after discussion with Moore (Pers. Comm., 1995), a time limit was settled on to reduce threat to the validity of data which depends on memory. Incidents had to occur between two months and two and a half years before the interview to allow reflection and action to occur following an event (research objectives c and d), while ensuring the experience was still within recall.

Memories of certain episodes in one's life are known as episodic memories (Cohen, 1989; Philipchalk, 1995). The psychological literature on memory suggested that many factors affected the relative recall of episodic memories and their reliability. The longer ago an event occurred the more intervening factors were involved (Cohen, 1989). So this research did not assume that memories recalled were entirely accurate.

Using memories to determine 'what actually happened' poses several problems. A body of work on eye witness testimony, relevant to courtroom situations, suggested that memory can be recalled in a way that depends as much on the questions as on the details of the event (Philipchalk, 1995). So three within-method triangulation techniques were used to strengthen data validity (Denzin, 1989; Moore, Pers. Com., 1995), especially in respect to research objective c (to determine possible causes of events for preventive purposes). Lodge incident reports written at the time of the incident were consulted to provide a

check on accuracy and possibly add detail. Also, where possible, I interviewed two people together who were involved in the same incident, providing collaboration. This was achieved for two interviews, involving three incidents. Each person had their own perspective on events, providing a fuller picture of the incident. Finally, respondents were sent copies of their transcripts to add or correct information not recalled or mis-recalled during the interview. In all cases, no significant alterations or additions were made on the returned transcripts.

There is a large literature on factors involved in distortion and reconstruction of episodic memories. Schemata and scripts for example, are known to distort memories (Philipchalk, 1995). These are mental structures concerning what we expect to happen in certain events or how we expect certain objects to appear, for example, respondents may have a script for what happens on a tramp. Specific factors related to respondents' motivations, emotions and self image also distort memories and are especially relevant to this study. Emotions such as guilt and motivations such as the desire not to appear incompetent may have affected the way that memories were reconstructed and reported. The well researched attributional or self serving bias, *'our tendency to take credit for positive behaviours or outcomes, but to blame external causes for negative ones'* (Baron and Byrne, 1987, p. 59; also supported by Brehm and Kassin, 1993) can also be responsible for memory reconstruction. Sports people for example will often attribute blame for negative events (like losing) to external factors such as the weather or the referee and take credit for positive events (like winning) by attributing internal factors such as their skill and heroic efforts. There is also the possibility that some may simply lie. Strategies outlined above were used to caution against these problems also, but some could not be fully cautioned against.

Having outlined the accuracy problems associated with using memories as data, there were also advantages. Recent work has extolled the value of memory work in unfolding meaning from people's experiences (Crawford *et al*, 1992). This was a particular strength in addressing objective b in this research.

In addition, HIPO incidents were atypical occurrences and therefore 'most memorable experiences' (MMEs) for respondents (Cohen, 1989; Woike, 1995).

> *Affective MMEs are deemed important ... and somewhat rare experiences for the majority ... Research suggests that emotional intensity combined with personal significance often gives rise to personal memories that are highly available for recall and comparatively resistant to forgetting* (Woike, 1995, p.1088-9).

Cohen (1989) outlined a study where students were asked to describe three of their clearest memories. '*The most commonly reported events concerned injuries or accidents, sports, and encounters with the opposite sex ...* ' (p.124). Elements which heightened impact and therefore improved retention were highly affective events involving intense feelings and emotions. Additionally, such events were retold often, cementing them in a person's memory even more. Subject matter for this research, HIPO incidents, would therefore have a high chance of retention in respondents' memories.

To determine which HIPO incidents were included in the study, respondents were asked to rate incidents using Albrighton's (1993) risk assessment model. As an external control on incidents included in the study and to control for the inaccuracy associated with self-reporting, I recruited an external consultant to also rate incidents. An outdoor educator with extensive experience working with school groups at the Lodge, this person was sent the incident account sections of interviews after the data collection phase. If one or both parties rated the incident a three or more, it was included in the study. Risk assessment scores are discussed in Chapter Six.

2.3 The research setting

Field work for this research took place at Rotoiti Lodge Outdoor Education Centre (hereafter known as Rotoiti Lodge or the Lodge). It opened in February 1968, the result of a local initiative, substantial voluntary work and community funding. It is situated in Nelson Lakes National Park in the upper South Island of New Zealand. At the time of the research (1995-7) Rotoiti Lodge was a school outdoor education centre, reflecting a unique partnership between the Department of Conservation and the Lake Rotoiti Outdoor Education Trust (hereafter known as the Trust).

The Department of Conservation owned and maintained the buildings (a large hall, kitchen, bunkrooms comprising 70 beds, a classroom, storage and gear sheds) and gave priority of use to thirteen Nelson and Marlborough secondary schools. The schools are best

described as six larger town schools (consisting of two single-sex girls' schools, one single sex boys' school and three co-educational schools); two smaller town co-educational schools; three rural co-educational area schools; a special school for girls and the correspondence school (co-educational, catering for pre-school to seventh form students who are unable to attend a regular school for various reasons).

The Trust devolved management of its affairs to an Executive Committee, comprised of the managing principal (constituent school principals take two year turns in this role), Trust accountant and two resident teachers. The Trust employed a warden who was responsible for maintenance and administrative tasks and two resident teachers (specialist outdoor educators) to develop, manage and instruct programmes to ensure education and conservation objectives were met. The Trust also owned and was responsible for the maintenance of, a considerable amount of outdoor gear, equipment and a minibus.

Programmes varied seasonally and according to group level. Although a regional centre, Rotoiti Lodge enjoyed a high national profile reflecting the breadth of the region's outdoor programmes (The Trust, 1992). These included environmental education programmes at sixth form level, and outdoor pursuits and adventure education programmes at third, fourth and sixth form levels. This study focused mainly on the latter. Rotoiti Lodge's current mission statement states it is:

> *An educational resource for schools which:*
> - *responds to the needs and requirements of each school*
> - *provides safe, stimulating experiences for pupils, as a medium for curriculum enrichment, enhancing self confidence and self esteem and developing communication, co-operation and group skills.* (Haddock and Campbell, 1995, p. i)

Approximately 2,000 students per year attend Lodge programmes. Groups of 40 to 60 students are in residence for five days (70 programme hours), for 37 weeks annually. This involves 2,500 programme hours or 140,000 participant hours per year (Haddock, 1994). An estimated 110-120 teachers attended camps at the Lodge annually with four accompanying each group.

Following are demographic and other characteristics of staff who attended camps at the Lodge in 1994 (Haddock, 1994). Teachers were mainly a mature group; the modal age range was 40-45 years, with 67 per cent aged between 31 and 45 years. Although drawn from six

coeducational, two girls' and one boys' school, 58 per cent of teachers who assisted with camps were male. Of the 92 study respondents, 82 attended camps in the period 1988-1994, of which 75 per cent attended three or more times. Staff reported a breadth of experience participating in activities related to Lodge activities (walking, tramping, camping, skiing, mountaineering), although they reported less leadership experience in these activities. Compared with national benchmarks for volunteer bush craft instructors, staff reported limited logged days over the previous two years and experience leading in winter conditions. For example, 55 staff reported they currently led the Bushline Tramp (a two day tramp above the bushline). Only four of these staff reported having the skills and experience necessary to lead tramps in winter conditions, yet all could potentially end up leading in such conditions. This fell below current nationally accepted outdoor industry standards for leading such a trip. The study (Haddock, 1994) concluded that outdoor and leadership experience of staff leading tramps, particularly above the bushline or in snow conditions was generally lacking. This was considered a potential risk to students and staff alike.

This situation developed incrementally due to changes in the types of activities provided at the Lodge over the decades. These activities reflected popular trends in outdoor education over time. Whereas geography and biology fieldwork exercises and tramps were the main activities offered at Rotoiti Lodge in the 1960's and 1970's, a trend toward more adventure activities such as canoeing, abseiling, caving and ropes courses was evident in the 1980's and 1990's (Crouch, Pers. Comm., 1996). These incremental changes were not accompanied by changes to staffing arrangements at the Lodge. Resident teachers led tramps in the early years while school staff assisted or led field work activities based around the Lodge. In later years resident teachers were used to lead adventure activities and some tramps, necessitating school staff to lead some tramps and low risk Lodge based activities such as orienteering or botany walks. By the 1990's, two specialist outdoor education staff were employed when four groups required experienced leaders each week. This necessitated reliance on school staff to lead activities for the other two groups, often without adequate experience or training. I surmise that over time, this situation became tradition and accepted practice.

2.4 The remoteness of the setting

Rotoiti Lodge activities were located in or near Nelson Lakes National Park, except Huia caves which was in neighbouring Kahurangi National Park. Booth and Peebles (1995, p. 40) reviewed the spatial differences in use of National Parks. They found that **front country** referred to visitors' centres, short walks, road ends and amenity areas such as day shelters and picnic spots. **Back country** was accessible via the hut and track network and **wilderness** contained no facilities at all. The latter two were accessible by foot (or helicopter in an emergency) only.

Rotoiti Lodge Outdoor Education Centre used front and back country and wilderness areas, all remote in a sense. For example, if an accident happened near the Lodge, the nearest medical help was an hours drive to Wakefield Medical Centre or one and a half hours drive to Nelson Hospital. Backcountry huts and campsites were from one and a half to three hours walk from the Lodge or road end. While front country huts (Lakehead and Coldwater) were three hours walk or 30 minutes motor boat ride from the Lodge.

2.5 Why Rotoiti Lodge?

Rotoiti Lodge was chosen as a study site because I was working as a resident teacher at the Lodge during the data collection period and had done for three years, an excellent position to do the research given my position and experience. Second, most prospective respondents knew me and an element of trust existed, so recruiting respondents was relatively easy. However, finding time to interview and hold focus group discussions was most difficult indeed. The very nature of a school camp is total commitment, with staff working long hours and constantly on duty. Aspects such as the changing weather and associated programme changes, student behaviour and staff fatigue acted to compound the hectic pace and atmosphere of camp as it went along.

Third, procedures were in place to record and discuss accidents and incidents and staff were used to this. Incident records relevant to the study were also available for examination. Fourth, boundaries were more identifiable as schools had similar outdoor education programmes at the time of the research, reducing variability in the study and

enhancing the possibility of generalisation of the findings. Finally, Lodge programmes were at the forefront of national EOTC curriculum and professional developments, so Rotoiti Lodge was a model for other centres to follow (The Trust, 1992). Thus research based at Rotoiti Lodge would most likely gain national attention in the field.

2.6 Description of sample

Qualitative inquiry focuses on a limited number of purposefully selected cases. Key criteria lead to selecting *'information rich cases ... from which one can learn a great deal about issues of central importance to ... the research, thus the term purposeful sampling'* (Patton, 1990, p. 169). A purposive sample was used for this study, selected from Resident Teachers employed at the Lodge; outdoor educators and instructors employed by the Lodge or schools; teachers and assistants who assisted with camps at the Lodge; all during the data collection period (October 1995 - August 1997). Respondents also needed to be willing participants in the study.

Interviewees had experienced a high potential incident whilst leading or co-leading a group of students during an outdoor activity at Rotoiti Lodge. Eleven respondents took part in ten individual or paired interviews. They included five teachers, three outdoor educators, one resident teacher, one instructor and one assistant (social worker employed by school). See Table 2.1 for their brief biographical details.

For convenience, focus group respondents were groups of staff who assisted with a camp together at Rotoiti Lodge during the data collection period. Nineteen respondents took part in five focus group discussions. They included ten teachers, seven outdoor educators and two instructors. One outdoor educator was also a liaison teacher and two outdoor educators were also assistants (postgraduate students on placement). Three focus groups involved three staff, one involved four and one involved six. See Table 2.2 for their brief biographical details.

2.7 Pilot study

A pilot study was conducted at the research setting. Its purpose was to develop, check and refine research procedures and instruments to be used for the primary data collection. Six

interviews and one focus group discussion were held. On completion of pilot work, the interview schedule and risk assessment model were revised (see Appendices II and III). Three incidents in pilot interviews were rated a three or more on the risk assessment matrix. So once revisions were made, the three respondents were asked the additional questions and to re-rate their incidents using the revised model, and their interviews were included in the primary data.

2.8 Methods

The research questions required detailed descriptive information about high potential incidents respondents had experienced whilst leading students at the Lodge. Qualitative methods were considered most suited for eliciting this information. So, in-depth semi-structured interviews and focus group discussions were chosen to collect data. Other sources were used to provide background to the study. These included incident and accident records kept at Rotoiti Lodge, my personal experience, literary sources, observations and discussions with colleagues.

2.8.1 The interviews

In-depth, semi-structured, audio-taped interviews were used to gain data to address research objectives a-e. Their purpose was to gain retrospective case study data pertaining to HIPO incidents. Respondents were asked to define terms associated with the study; discuss a high potential incident they had experienced whilst leading or co-leading students at the Lodge; describe the actions they had taken since the event; and rate the incident using a risk assessment model.

All interviews were semi-structured with an 'emergent design', meaning that as something was learned from an interview, that knowledge was built into later parts of the interview or the next interview (Lincoln & Guba, 1985). A schedule of questions guided interviews to elicit information which specifically addressed research objectives a-e. The schedule was modified from a previous study on a similar topic (Haddock, 1995/6a), and the pilot study. It is included in Appendix III.

Interviews lasted between 35 and 90 minutes, with an average of 55 minutes. Times and places were arranged to suit respondents. They were held at the Lodge, my house which is one kilometre from the Lodge, or at the respondent's school or home. All interviews were face to face except one which was conducted over the telephone.

2.8.2 The focus groups

In-depth, semi-structured, audio-taped focus group discussions were used to address research objectives b and e. The discussions differed from the in-depth interviews, taking place with a minimum of input from me as the interviewer. Topics included defining key concepts relevant to the study; what they did about events afterwards, if anything; a risk assessment case-study; (see Appendix III for the full schedule). I initiated topics and facilitated discussion, whilst allowing the group to formulate and develop their ideas, challenge one another's assertions and explore complex issues themselves. This reduced the chances of me inadvertently influencing those involved (Morgan, 1988).

Six focus group discussions were held. Five were included in the study as one was not taped due to operator error. Times and places for meetings were negotiated by myself and staff. Three were held at the Lodge in the classroom or resident teacher's office, one at a school and one by conference telephone call. It was much harder to arrange for staff to be involved in the focus group discussions than interviews. Given the nature and demands of camps, it was difficult to withdraw all staff from their responsibilities. To enable them to be released for a sufficient length of time, a structured activity was run by a Resident Teacher or Department of Conservation officer or a teacher, parents or other assistants supervised students. Focus group discussions lasted from 45 to 90 minutes.

2.8.3 The respondents

To recruit respondents, I sent a letter to staff through their Liaison Teachers outlining my research and informing them I would ask for volunteers to participate in the study if they came to the Lodge in the data collection period. I outlined the research to principals and Liaison Teachers at the AGM of the Trust, wrote to Trustees formally asking permission to undertake the research and wrote a brief article explaining the purpose and details of the research in the Lodge newsletter to all schools.

2.8.3.1 Interview respondents

I used three methods to recruit interviewees. One involved me explaining my project at the first staff briefing and asking if anyone was interested in being involved. I recruited four respondents in this way. Second, if a teacher was assisting on a camp whom I knew had experienced an incident in the last two and a half years, I asked them individually if they were interested in being involved in my project. I gained three interviews in this way, including one pair interview. All those asked agreed to be involved.

Finally, if an incident occurred during the data collection period, I either asked those involved if they were prepared to be interviewed at a later date or made a mental note and telephoned them several months later. I gained three interviews this way, including one pair interview focusing on two separate incidents which occurred on the same camp they had attended. All those asked, agreed to be involved. In total, ten interviews were held with eleven respondents, five females and six males, from five different schools. Brief biographical details are included in Table 2.1 below.

Table 2.1 Interview respondents

Name	Gender	Age (at time of incident)	Staff category (see section 1.2.2 for definitions)	Role (during incident)	School Group[2]
Agatha	F	36	Instructor	Leader	Orange
Tommy	M	44	Teacher	Assistant	Violet
Miriam	F	31	Teacher	Assistant	Violet
Renal	M	38	Outdoor educator	Leader / TIC[3]	Orange
Bruce	M	47	Instructor	Co-leader	Grey
Fred	M	46	Teacher	Leader / TIC	Blue
Bill	M	55	Teacher	Assistant	Blue
Garth	M	31	Instructor	Co-leader	Red
Gintime	F	34	Assistant (social worker)	Co-leader	White
Phoebe	F	53	Teacher	Leader	Blue
Spur	M	36	Outdoor educator	Leader / TIC	Orange
Jane-Lee	F	34	Outdoor educator	Leader / TIC	Orange

Of the ten interviews, eight were individual and two were pair interviews. Two individual interviewees were actually the same person (Spur and Renal), interviewed on different occasions about different incidents.

[2] Colours denote school group respondent was working with
[3] TIC = Teacher in charge of camp

2.8.3.2 Focus group respondents

Respondents for focus group discussions were the group of three to four school staff who attended a particular camp together during the data collection period. Originally, three focus groups were planned but five were held in order to achieve a gender balance, diversity of schools and range of experience, to reflect groups which typically came to the Lodge. Discussions may have been affected by staff who were tired or distracted by their other responsibilities, time pressures and a staff member leaving for a period of time.

In summary, nineteen staff from six schools participated in five focus group discussions. Of the nineteen, ten were men and nine were women; ten were curriculum teachers and nine were experienced outdoor educators or instructors. Their brief biographical details are displayed in Table 2.2 below.

Table 2.2 Focus group respondents

Name	Gender	Staff category (see section 1.2.2 for definitions)	Focus Group	School
Greg	M	Teacher	1	Blue
Sue	F	Teacher	1	Blue
Ben	M	Teacher	1	Blue
George	M	Outdoor educator	2	Gold
Charlie	M	Instructor	2	Gold
Norm	M	Outdoor educator & Assistant	2	Assisting at Lodge
Ralph	M	Outdoor educator & Assistant	2	Assisting at Lodge
Baz	M	Instructor	2	Gold
Jackie	F	Teacher	2	Gold
Eric	M	Outdoor Educator	3	Turquiose
Frank	M	Teacher	3	Black
Lou	M	Outdoor Educator	3	Purple
Jade	F	Teacher	4	Green
Leila	F	Teacher	4	Green
Ripena	F	Teacher	4	Green
Jane	F	Outdoor educator & Liaison Teacher	5	Green
Juanita	F	Outdoor educator	5	Green
Janice	F	Teacher	5	Green
Ezmerelda	F	Teacher	5	Green

2.9 Ethical considerations.

Overt Research. I was explicit about this research throughout the process. All those involved in the research setting (resident teachers, liaison teachers, school staff, instructors, assistants) were informed of the research prior to their possible involvement. All prospective participants were invited to discuss queries directly with me.

Confidentiality. As respondents could make themselves vulnerable due to the nature of the information they disclosed in the research, the following efforts were made to protect their confidentiality. At the time of data collection, informed consent forms (Appendix IV) were signed by respondents covering their agreement to participate and assuring right of withdrawal and confidentiality. Pseudonyms were used for respondent and school names. If respondents felt they were compromising the confidentiality of other(s) by talking about an incident with me, they were offered the opportunity to consult with them before or after being interviewed. They could also alter or delete associated information from the transcript when sent to them. None chose to do this.

Dual Roles. Combining the roles and responsibilities of teacher and researcher raised further ethical questions. As a professional outdoor educator and programme manager, I had the primary responsibilities of ensuring safety and high quality experiences for students. If a conflict arose between the two roles, then my primary responsibilities took precedence. The time period for data collection allowed for this.

2.10 Data analysis

I returned from the field with a large amount of qualitative data. I analysed data thematically based on emergent or constructed categories. Coding manually, I systematically analysed data related to each theme creating units which allowed precise description of relevant content characteristics (Lincoln and Guba, 1985).

Glaser and Strauss (1970) described qualitative research as a means for deriving substantive or grounded theory, not simply a means for determining preliminary categories for ensuing quantitative research. Lincoln and Guba (1985) concurred with this. I have used it to develop definitions and theory in this thesis.

In writing up, I let respondents speak for themselves to illustrate points relevant to the research. To assist the reader, I took out speech mannerisms and returned colloquialisms to standard English. I also abbreviated some quotes to reduce the total volume, indicating this with dots (...). In doing so I have ensured that the full sense of the quote was retained.

2.11 Chapter summary

In this chapter I discussed my theoretical perspective for the research. I chose a symbolic interactionist approach as it was suited to obtaining the detailed descriptive data needed to address the research objectives. This approach had methodological implications, requiring the researcher to be positioned in the setting in order to see issues from the respondents' perspective. Qualitative methods were best suited to achieve this, so I chose in-depth interviews and focus group discussions to gather primary data. Lodge incident records were consulted for background information along with relevant literature, my own experience and discussions with colleagues.

I acknowledged problems and advantages associated with using episodal memories as data. These related to how the data was to be treated. If accuracy was important, as with research objective c (determining possible causes of events), then many variables could distort memory according to the literature. These included time passing, emotional and motivational influences on respondents and the possibility of someone lying. I used several measures to mitigate these affects, including limiting the time passed since the event, consulting incident records made at the time, interviewing two people involved in the same event together to provide collaboration, and sending respondents transcripts of their interviews later so they could add or correct information on the transcript. An advantage to the research was that 'most memorable experiences', such as HIPO incidents, were highly available for recall. Memory work was also valuable in finding meanings of events for those who experienced them.

I described the sample as teachers, outdoor educators, instructors and assistants who had attended camps at Rotoiti during the data collection period. Interviewees were staff who had experienced a HIPO incident whilst leading a group of students at the Lodge. Their data was used to address research questions a to e. Focus group participants were a group of staff who attended a camp together during the data collection period. Their data was used to address research questions b, d and e.

I conducted a pilot study for the research which assisted in refining data collection procedures and instruments, namely timing issues, the interview schedule and risk

assessment tool. Ethical considerations included giving my primary responsibilities as outdoor educator and manager precedence over those as researcher. Respondents' confidentiality was protected by using pseudonyms for their names and schools. Rotoiti Lodge was chosen as the setting because I worked there full time which gave me access and knowledge beneficial to the research. Boundaries were more identifiable as schools had similar outdoor education programmes at the time of the research. This reduced variability in the study, enhancing the possibility of generalisation of the findings. I described the research setting in detail, describing the management, schools and programme, highlighting the remoteness of the area and giving context to the research. To place the research setting into a larger picture, the context of outdoor education is described next in Chapter Three.

CHAPTER THREE The context of outdoor education

3.1 Introduction

> *Because of New Zealand's small size and its amazingly diverse natural terrain, there is a wide variety of accessible opportunities for outdoor recreation. As a result of its geography and decentralisation, New Zealanders feel closer to the outdoors ... and generally either the coast or the mountains, or both, are within easy reach.*
>
> *Inevitably, too, outdoor education feels much more a part of education. More Headmasters (sic) believe in it, more teachers are keen to run trips, and there are fewer problems in getting school children to bring along a sleeping bag and the other outdoor gear that is needed to run a trip or camp with a minimum of fuss...* (Abbott, 1990, p.307).

3.2 Defining outdoor education

While '*the outdoors has always played a part in New Zealand education*' (Abbott, 1990, p.307), common usage and the literature alike, show a number of terms are used to describe learning which takes place in the out-of-doors. Terms such as outdoor education, education outside the classroom, environmental education, adventure education, and outdoor pursuits are used extensively in this field, sometimes interchangeably, but differences exist in the approaches and goals of each. While there is no standard agreement of definition for most of these terms and understandings of them are not consistent, the following definitions have been selected to best describe different aspects of Rotoiti Lodge's programme. I acknowledge that teachers' definitions may differ from these. Finally, a basic rationale for the use of risk in outdoor education is also touched on.

Rotoiti Lodge is an outdoor education centre. As defined in section 1.2.1., **outdoor education** and **education outside the classroom** (EOTC) are broad terms describing education which primarily takes place in the natural environment. Schools bring pupils to Rotoiti Lodge as part of their EOTC curriculum which is in their charters. Priest (1990) explained that historically, two branches of outdoor education had been identified, environmental education and adventure education.

Environmental education had two main concerns, *"the ecosystemic relationships refer to the interdependence of living organisms in an ecological microclimate ... [and the] ekistic relationships refer to the key interactions between human society and the natural resources of an environment"* (p. 113). Both concerns are investigated in Rotoiti Lodge sixth form biology and geography programmes.

Adventure education was education based on activities which deliberately exposed participants to elements of risk (section 1.2.1. defines these) which could be physical, emotional or material (Ewert, 1989a). While *real* risk was common to the recreational outcome of outdoor adventure pursuits, activities which had a high degree of *perceived* risk, were more often used in educational adventure activities (Mortlock, 1983). This is the case at Rotoiti Lodge which uses natural and constructed environments to achieve this.

Outdoor pursuits are activities involving moving across natural land and/or water environments by non mechanised means (Ford and Blanchard, 1985; Priest, 1990). For example tramping, canoeing and caving are outdoor pursuits commonly used in Rotoiti programmes. *"The point at which the outdoor pursuit becomes an 'adventure activity' is moot and determined by the participant"* (Ford and Blanchard, 1985, p. 5). For example, in a group at Rotoiti, there may be students who find their canoe-tramp journey to the head of the lake an adventure while others find it a journey involving two outdoor pursuits.

Why risk in the first place? A vast literature exists on this topic, however Snider (1964) offered one of the simplest explanations. He asserted that risks may be further classified as speculative or pure. Speculative risks held forth the promise of gain or the chance of loss. Pure risks were taken with the prospect of only loss or no loss. I contend that adventure education embraces the concept of speculative risk to achieve educational goals as there would be little point or justification for utilising pure risk. With its promise of gains in many areas (confidence, self esteem, skills, teamwork etc) risk and hence adventure can be a powerful educational tool. However diligent risk management by competent leaders is required to minimise the possibility of loss. This theme is expanded fully in section 3.4.

3.3 Outdoor education in New Zealand

Detailed information on the history of outdoor education in New Zealand remains scant at present, although Abbott (1990) and Lynch (1998) stated references to the use of the outdoors in an educational context were noted in documents over a century old. The School of Physical Education in Otago was responsible for a more recent push in the 1940s and 50s due to the influence of Professor P.A. Smithells, who believed that outdoor education could *"more effectively achieve more educational goals than any other subject"* (Abbott, 1990, p. 308). Over the following four decades outdoor education became established at all educational levels, from pre-school to tertiary.

In the 1960s and 70s a number of residential centres sprang up to cater for high school outdoor education needs, many employing resident teachers (Abbott, 1990). One such centre was Rotoiti Lodge. This trend was a recognition of the importance of supporting school programmes with experienced outdoor staff and purpose built facilities. The building of centres involved co-operative efforts by local schools and communities. Gradually the Department of Education capitalised on these developments, contributing assistance with policies, salaries for resident teachers and funding for equipment purchase and building maintenance. Different centres developed different emphases in outdoor education programmes offered.

Teachers of outdoor education in New Zealand had traditionally volunteered for the job if they had an interest in the area and some experience. Du Feu, (1981) reported:

> *'up to the present training in outdoor education has been piecemeal with no adequate training programmes for teachers. Most of the teachers taking part in OE programmes have drifted into it either with a mountaineering, army, university field trip or tramping background, and an overwhelming belief in the benefits to be gained from the programmes'* (p. 23).

Abbot (1976a) identified that competence was essential for teachers leading outdoor trips. In 1978 he reported on various outdoor training opportunities available to teachers and the promising development of a national outdoor training scheme designed to streamline and sequence training. By 1980, an Outdoor Training Advisory Board (OTAB) representing all major outdoor interest groups had been set up. It produced the 'Outdoor Training Guide' (1980) which outlined professional standards for leadership in a range of outdoor activities and

printed an outdoor logbook. This was like a diary for outdoor leaders to record their training and experience in, for vocational and professional development purposes. The scheme never got off the ground due to much opposition and disagreement on the form it should take. This debate also raged in the United States (Sakofs, *in* Davidson, 1988). In 1986 the New Zealand Council for Recreation and Sport reported *'outdoor leader training has been spasmodic, unstructured and directionless'* (Davidson, 1988, p. 5).

A new direction for outdoor leader training in New Zealand was set in the late 1980's with the development of several training and assessment schemes. These set standards in skills, experience and instruction for outdoor leaders. The New Zealand Outdoor Instructors' Association (NZOIA) was formed in 1987 to provide training and assessment for professional instructors; the New Zealand Mountain Safety Council (NZMSC) introduced a training and assessment scheme for its voluntary instructors at a similar time; and the Department of Education introduced the Risk Management Training and Assessment Scheme (RMTA) aimed at teachers of EOTC (Dickinson, 1992). Education Outdoors New Zealand (EONZ, representing interests of EOTC teachers) has joined a more recent collaborative effort to establish a joint qualifications scheme. During negotiations, a need was identified for a low level baseline qualification suitable for teachers who take students for camp based activities, and subsequently, 'Outdoor 1' was developed. The basket of qualifications in outdoor disciplines (eg: bush, alpine, kayak, abseil) can be taken up by teachers, volunteers and professional instructors alike. In addition, Colleges of Education offered pre-service and in-service training courses in outdoor education and a wide range of skills courses were offered by the Outdoor Pursuits Centre and the like (Boyes, 1992).

Despite the comprehensive training opportunities available in outdoor leadership by the 1990's, few teachers took these up. For example, a 1994 survey (Haddock) showed that less than 20 per cent of teachers who assisted on Rotoiti camps (n=92) had undertaken any sort of outdoor leadership related training in the previous five years. Seventy per cent had undertaken first aid training however. In subsequent years since the survey, I believe little has changed, the reasons for which I have not attempted to explain in this thesis. However time availability and costs probably come into it. Also, few schools require staff to hold such qualifications in order to lead outdoor activities, nor do they actively encourage and support staff to do so. While some

schools hire outdoor instructors to support their programmes, in most cases teachers still volunteer for the job due to interest, experience or pressure to staff the camps.

3.4 Leadership and safety in outdoor education

The teacher or instructor, as outdoor leader, was a key actor in the incidents in this study. It was therefore important to examine the outdoor leadership literature. The role, competencies and responsibilities of outdoor leaders were examined to identify the issues surrounding classroom teachers and instructors as leaders of outdoor education activities. Although the outdoor leadership literature was extensive, little focused on teachers as outdoor leaders, yet schools were the main providers of outdoor education in New Zealand (Knol, Pers. Comm., 1997). This may be due to literature being mainly North American, where most outdoor education is taken by specialists and not classroom teachers. Moreover, effective outdoor leadership was shown to be inextricably linked with safety.

Safety is a complex issue in outdoor education. *'...the dilemma of safety versus risk is the critical ... issue in ... adventure education.'* (Mobley, 1981, p. 38). While risk is a fundamental ingredient of adventure experiences, safety during the experience is expected by participants, particularly in school programmes. Experienced outdoor leaders could manipulate an adventure experience to give the appearance but not the essence of risk by using activities with high perceived and low real risk. This involved accurate judgement and the sound base of knowledge and skill of a competent outdoor leader (Priest and Baillie, 1987). For the administrator or manager it also posed challenges, theirs was the responsibility of ensuring a balance between the two. *'The paradox ... is also a goal for organisations to build up their support systems for staff working in the field ... [it] has been a progressive force'* (James, 1980, p. 21). I fear that the force has not been as progressive for the New Zealand teacher as it has for the professional and voluntary instructor.

3.4.1 Leader competence

Outdoor leaders were morally and ethically bound to manage risks so few accidents occurred and those that did were minor (Blanchard and Ford, 1895). They were also legally bound to ensure that no harm came to employees and others in the workplace (Health and Safety in Employment Act, 1992). Outdoor leadership competence was a key means of fulfilling these

responsibilities according to the literature. The following is an examination of the specific knowledge, skills and attributes required by a competent outdoor leader.

Ford and Blanchard (1985) suggested some basic qualities to look for when selecting leaders: enthusiasm, ability (practical in the activity), experience, judgement, appreciation of the outdoors and enjoyment of the outdoors. Not in priority order, these were similar to qualities identified by New Zealand writers (Abbott, 1976a, 1976b and 1978; Banks, 1990; Outdoor Training Advisory Board, 1980; Rawson, 1995; Ringer, 1987; Trist, 1977).

Ringer (1987) identified the importance of outdoor leaders developing *people skills* in addition to the *technical skills* traditionally associated with leader competence in the outdoors. He described people skills as: the ability to start groups off on a good note, facilitating group dynamics effectively, assertiveness, skills in listening, conflict resolution and negotiation, working with violent behaviours, anger management, basic counselling, self awareness, stress management and decision-making skills. Others concurred with Ringer (Ford & Blanchard, 1985; Phipps & Swiderski, 1990). An international survey of outdoor leadership preparation (Priest,1987) found that New Zealand outdoor educators considered outdoor leaders were best prepared for their role by reducing 'hard' (technical skills) and emphasising 'soft' (people) skills in their place. He investigated what it took to be considered an effective outdoor leader in five countries, Australia, Canada, Great Britain, New Zealand and the United States. A list of fourteen components of effective outdoor leadership resulted:

Table 3.1 Components of effective outdoor leadership (Priest, 1987, p. 34).

SKILLS	ATTRIBUTES
Technical activity skills	Motivational philosophy and interest
Safety skills	Physical fitness
Organisational skills	Healthy self concept & ego
Environmental skills	Awareness and empathy for others
Instructional skills	Personable traits & behaviour
Group management skills	Flexible leadership style
Problem solving skills	Judgement based on experience

Different writers emphasised different qualities. Many (Cain & McAvoy, 1990; Hunt, 1984; Miles & Priest, 1990; Phipps & Swiderski, 1990; Raiola, 1990) highlighted instructor *judgement* and *decision-making* skills as critical to safety and effective leadership. Hunt

declared that although rules had their place in outdoor programmes, a reliance on them was no substitute for judgement based on *experience.* Priest and Dixon (1990) asserted that;

> *Judgement is the fulcrum on which balances the competence of staff members. Staff can be the most technically competent, safe, and environmentally careful people in the world, but without judgement they will not be able to take care of themselves, others or the outdoors* (p. 5).

Cain and McAvoy (1990) saw leadership and the judgement and decision-making process as synonymous, believing outdoor and leadership experience could only be accumulated over a period of time in a practical manner in 'real' settings. As such, appropriate experience was seen as an important foundation of effective outdoor leadership and sound risk management. Other authors agreed (Abbott, 1976b; Haddock, 1993a; Miles & Priest, 1990; Outdoor Training Advisory Board, 1980). The National Field Officer of the New Zealand Mountain Safety Council, stressed the importance of experience for teachers also:

> *The teacher must first be thoroughly competent in the skills of the activity and widely experienced, with a deep understanding from personal experience of the sort of problems and difficulties that can occur at the most unexpected moment. The sort of competence that is needed is learned only through long experience, and I believe there is a real danger in the quick course, whether 'in service' or any other! ... Responsible and reasonable precaution within the activity is the clue to good leadership; and if there is one virtue above all others in bush and mountain recreation, it is experience* (Trist, 1977, p. 3).

Education authorities in New Zealand also recognised the importance of experience with regard to leader competence, acknowledging that certificates, forms and regulations could not replace the wisdom from leadership experience in the outdoors (The Department of Education,1985; Rawson, 1995) and went further to state that,

> *Principals must ensure that a sufficient pool of experienced staff is built up, and maintained where necessary by the training of others. If staff changes significantly reduce this pool, the Education Outside the Classroom programme may have to be curtailed* (Department of Education, 1985, p. 4).

Priest and Dixon (1990) tempered this view in isolation, with a warning that:

> *gaining greater experience might help an outdoor leader to gain sound judgement, but simple possession of experience in no way assured good judgement. All experience must be processed or reflected upon, tested and affirmed* (p. 5).

Others concurred with this view (Teschner and Wolter, 1990, p. 88; Williamson and Mobley, 1984, p. 5). To this end, this study investigated how (or if) teachers processed their experiences

of incidents in outdoor education (research objectives d and e), to illuminate effective means of improving leader judgement through constructive reflection.

Several authors (Davidson, 1992; McConnell, 1989, cited in Haddock, 1993a; Martin and Priest, 1985) upheld the view that competent leaders should have a greater level of skill and experience than was required for the activity, to maintain a safety margin to cope under stress. Raiola (1990) labelled this 'unconscious competence' whereby the leader was able to operate at a high level of skill and ability without conscious effort.

In summary, the literature agreed that outdoor leaders assuming responsibility for others, should be thoroughly competent for the job. Competence was indicated by technical activity skills, people skills relevant to working with the particular group, sound judgement during the activity in an often changing environment and circumstances, which in turn was based on an appropriate amount of accumulated experience. The qualification schemes developed in New Zealand by the NZMSC, NZOIA and EONZ reflect the development and attainment of attributes identified in the above discussion.

3.5 How much risk is acceptable?

Authors have attempted to assess the degree of risk associated with human activities and from this derive a measure of acceptable risk which was practical and defensible. Accident statistics provided a database from which to work. Some authors (Davis, 1980; Ewert, 1989b; Meier, 1985; Meyer, 1979; Priest & Baillie, 1987) used comparisons of such statistics to determine acceptable levels of risk. Conclusions appear inconsistent with one another and do not take account of the concept of societal risk tolerance.

Meyer (1979) gathered useful facts by informally surveying well established, full-time adventure programmes. He estimated a fatality rate of about .5 per million hours of exposure, as compared with an accidental death rate in the U.S. of .1 per million human hours (all causes, at work and away). He concluded that the risk of fatal accidents in adventure programmes could be five times of that in everyday activity. Dis-aggregated data also suggested adventure programmes were safer than comparable time in an automobile, which he estimated to be about .7 fatalities per million hours of exposure.

Meyer (1979) also examined injury rates of various activities. Using the National Safety Council criteria for reportable injury[4], he found the injury rate in adventure programmes was about 40 injuries per million hours of exposure. Meyer concluded that there were real and significant risks associated with adventure programmes. The injury rate was on a par with hazardous occupations such as mining, but had less risk than motor vehicle travel or college football where the injury rate was more than 60 injuries per million hours of exposure. No indication was made of the severity of injuries.

Ewert (1989b) compared studies of outdoor adventure programmes' injury and fatality rates (Table 3.2 below). He concluded that recent studies affirmed earlier evidence that adventure programmes were no more risky than common every-day activities such as automobile riding.

Table 3.2 [Adventure Programme] Studies Indicating Rates of Injuries / Fatalities Per Million Participant Hours (Unshaded portion of table: Ewert, 1989b, p. 90).

Study	Year	Injury Rate Per Million Hours	Fatality Rate Per Million Hours
Meyer	1979	40.00	.50
Higgins	1981	37.50	0
Rohnke[5]	1982	5.13	0
Ewert & Johnson	1983	34.00	.42
Hale	1987	20.25	0
Gentile *et al*	1992	287.00	.35
Paton	1992	92.50	.69

The shaded portion of Table 3.2 shows results of two more studies (Gentile *et al,* 1994; Paton, 1994)[6] . While the latter two show similar fatality rates to earlier studies, they indicate

[4] Where the injured person is unable to perform regular duties for one or more days after being injured.

[5] Based on data generated from ropes courses only.

[6] I converted the fatality and injury rates of these studies to the same scales used in the table.

significantly higher injury rates. Two reasons could account for this. First, the wilderness-based programmes concerned (Outward Bound USA and the National Outdoor Leadership School USA) range in length from four days to three months with an average of three to four weeks. Researchers identified that injuries such as strains and sprains were more likely to affect lost days during periods of wilderness travel as participants were dependent on their mobility to participate. On shorter centre-based courses, participants were still able to participate in other activities such as kayaking if they strained an ankle. Hence, lost days were mitigated. Second, unlike the earlier studies, the latter two were conducted by trained researchers in association with experienced programme staff, involving standardised reporting procedures which all staff were trained to use. Together with a culture of increased awareness and higher standards of risk management in the 1990's, a more scientific approach probably accounted for the capture of many injuries which previously went unreported.

Baillie (1986, *cited in* Priest and Baillie, 1987) pondered how much risk was acceptable for outdoor educators to expose participants to. He proposed the model of 'Normal Life Risk', based on comparing accident data from everyday life activities with those of outdoor adventure-based programmes. Baillie concluded *that 'adventure experiences are no more risky than every day living'* (cited in Priest and Baillie, 1987, p. 22). Priest and Baillie (1987) considered the sources on which this view was based to be brief and dated, and called for more work in this area.

Baillie (1986, *cited in* Priest and Baillie, 1987) and Meyer (1979) both attempted to assess the risk associated with adventure activities, using normal life risk as a benchmark, in order to justify the risk to society. However, the two authors defined and interpreted key terms differently. Whereas Meyer equated 'normal life risk' with injury and death rates of all activities combined (adventure activities rating five times this amount). Baillie equated 'normal life risk' with injury and death rates of automobile driving and college football only, which had slightly higher injury and death rates than adventure programmes. Thus 'normal life risk' as an acceptable level of risk in outdoor education remains moot, confusing and misleading.

Meier (1985) in considering Meyer's (1979) results, noted that adventure programmes may not be as dangerous as many envisaged. He stated risks were probably no greater than

those in recreational activities such as softball and basketball. He suggested 'risk recreation' was a misnomer if used for all adventure programmes, but admitted there were objective dangers that must be recognised and minimised.

In summary, authors (Baillie, 1986, cited in Priest and Baillie, 1987; Ewert, 1989b; Meyer, 1979; Priest and Baillie, 1987) variously claimed that it was unrealistic to eliminate fatalities and serious disabling injury from adventure-based programmes. It appeared both practical and ethically defensible however, to reduce fatality and disabling injury rates to the level associated with common every-day activities such as automobile riding or college football. This goal seems logical, but the issue is more complex than it first appears.

3.6 How much risk is tolerable?

Kasperson and Kasperson (1983, *cited in* Kates, Hohenemser and Kasperson, 1985) viewed the acceptability of risk as an unfortunate term, which implied a degree of consent that rarely accompanied impositions of risk. Tolerability of risk was a term which better captured most risk situations to them. Ewert (1989b) identified that the public's perception of risk may differ from actual injury rates, yet both issues were of concern in a risk management plan. So both issues should be of concern in outdoor education.

Society's *tolerance* of risk was linked to values, not accident statistics (Douglas and Wildavsky, 1982). This cultural relativist perspective, they acknowledged, had a major problem however: *'how can we know whether the dangers are actually increasing or whether we are more afraid?'* (p. 188).

Risk perceptions appear to be dynamic. Ewert (1989b) identified that public perception of outdoor recreation had changed over time for a number of activities. As a recreational activity became more accessible and accepted as a more 'normal' leisure pursuit, the perception of risk and danger changed. Ewert observed how some activities, for example rock climbing, were considered risky, while activities that were more commonplace such as skiing, were seen as less risky. Ironically, it was the latter type which attracted more litigation in the United States. This illustrates how society lacks tolerance for accidents in activities where the perception of risk is low, and adds weight to the cultural relativists'

argument. Or, it could be explained by the deep pocket approach to litigation in the US. In the case of skiing and rock climbing, the more money the resource managers have, the more likelihood there is of suing.

Shrader-Frechette (1991) dismissed the cultural-relativist's work and position for failing to be 'rational' or 'objective'. Lowrence (1980) observed that one of the major accomplishments of this century had been refinement of the notion of 'scientific objectivity', but noted that the concept was still not widely understood. He argued, as did others in the philosophy of science, that objective scientific 'truth' was knowledge that was subjectively endorsed by the scientific community. He made the point that estimates of risk, whether made by scientists or lay people, could not evade including 'subjective' human opinion. In that case, it may be impossible to determine an acceptable level of risk. Or, it may only be possible within temporal, cultural, social or contextual constraints.

Lowrence (1980) stated that we should not be surprised when scientists disagreed or when the public perceived a risk differently from experts. Schrader-Frechette (1991) also believed that laypersons were often more rational in their evaluation of societal risks than either experts or governments recognised:

> *Some persons claim that only* ***technical experts*** *are capable of making rational judgements about risk acceptability, whereas others assert that only potential victims, usually* ***laypeople****, are in a position to be truly rational about the evaluation of possible hazards* (p. 7).

Trish Consedine's comments, after her daughter's death on an Outward Bound course, illustrates this discrepancy:

> *I think Outward Bound is a violent culture and I think their response to Suzanne's death underpins this. So we are not satisfied with cosmetic changes, minor reforms of bits and pieces of the programme. We think the whole organisation should be closed and have a radical rethink of what it's on about.* (Brett, 1994, p. 49).

Kates *et al.* (1985) summarised a National Research Council (1982) report, identifying three forces that have altered peoples perceptions of risk:

1. *The intensified reporting of risks in the media, which sometimes justified and sometimes not, magnifies people's concerns;*
2. *the loss of faith in institutions ostensibly created to deal with risk; and*
3. *the growth of a complex, highly technological society that is interdependent in its functioning and that reduces the perception of individuals that they can control the events.* (p. 3) [numbers added].

The first two forces especially had helped shape peoples' perceptions of risk in the outdoors. Society's response to several outdoor accidents in New Zealand in recent years attests to this. For example the Ruapehu tragedy, where six soldiers died of hypothermia during an Army Adventurous Training Unit course on Mount Ruapehu ("What Did It Teach Us?" 1991); Suzanne Consedine's death from a fall during an Outward Bound course (Brett, 1994); and the Cave Creek accident, where 14 people died when a Department of Conservation viewing platform collapsed near the Paparoa National Park (Oakley, 1995). All three of these accidents involved well known institutions and received major media and public attention along with calls for public accountability. Consequently, the accidents were followed by internal or external inquiries (by police, Occupational Safety and Health Service and/or a Commission of Inquiry). Media reports reflected that the events shook the public's faith in the institutions involved. The public would expect schools and outdoor education centres to provide a high standard of care for students also.

Meanwhile, deaths of recreationists who have gone into the hills of their own accord have received media attention but no public outcry. Society appears to accept and tolerate these accidents. Schulze (1980) offered an explanation for this. He noted that the public readily accepts individuals killing themselves in their own cars, but views public airline safety in a totally different manner. He identified an ethical split between public and private safety. *"...ie. knowingly imposing a risk on oneself is 'right' while imposing a risk on someone else is wrong' "* (p. 218).

There are risks faced by people in everyday life which society allows them to assume voluntarily. But this is not the case where involuntary risk is involved, especially if the risk is imposed in an institutional framework (Douglas and Wildavsky, 1982). Outdoor education centres and schools therefore, have a strong moral obligation to ensure facilities and programmes meet high standards of public safety. Moreover, society is likely to be harsh on failures to meet such standards as summed up by Trish Consedine earlier.

3.7 Chapter summary

This chapter has established the context of outdoor education. First, I defined outdoor education and distinguished different elements of it, which relate to the study. Second, I

traced outdoor education history in New Zealand, including the availability of outdoor education training and how teachers became outdoor leaders. Despite a range of outdoor leadership training and qualifications being available for voluntary and professional instructors and teachers alike by the 1990s, few teachers chose to take these up. Third, the responsibilities of outdoor leaders were discussed and competence issues examined. I stressed how these factors were inextricably linked to safety in outdoor education. Finally, society's acceptance and tolerance of risk were considered. I explored the social context in which a risk event occurred and responses to it shaped, thus improving understanding of its wider social meaning and further justifying the research. Although fatality and injury rates for outdoor activities were generally lower than those for common activities such as car riding and football, the literature did not agree on an acceptable level of risk that teachers and instructors could expose students to. What was clear, was society had set high standards of care in respect to outdoor leaders and institutions with responsibility for student safety. Exposure to involuntary risks, especially within an institutional framework, was judged harshly by society. Risk acceptability therefore was dynamic but could be determined by monitoring the public 'mood'. So societal risk tolerance needed to be considered together with accident rates, as both were important in a risk management plan.

The context has now been set for remainder of the thesis. Research objective b was to describe the meanings of HIPO incidents for the respondents involved including: definitions of terms meaningful to respondents; effects the event had on those involved and determining the significance of an event. A three pronged approach was taken to address the parts to the objective and has resulted in the three substantive chapters that follow. Chapter Four explores meanings of the key terms accident, incident and epic and settles on definitions which were meaningful to respondents. Chapter Five examines the effects of HIPO incidents on those involved, further assisting in the quest for meanings of these events. Chapter Six evaluates a tool used in this research, designed to determine the significance of an event.

CHAPTER FOUR Towards definitions and meanings - Accidents Incidents and Epics

4.1 Introduction

> *Like adventure, misadventure is a state of mind. Unlike adventure, the immediate reactions are essentially negative rather than positive. At one extreme the result is death or serious injury. At the other extreme are feelings of relief that one has escaped any serious consequences from a situation that was unduly stressful and more demanding than one had conceived at the onset of their journey. The enjoyment, satisfaction and euphoria that can arise from adventurous experiences are replaced by negative feelings of 'Thank goodness that's over', or, 'God that was lucky'.* (Mortlock, 1983, p.41).

This study is about incidents with high potential for serious harm in outdoor education, and the meanings they have for those involved. I concentrated on the concepts associated with this type of event: accident, incident and epic, the reasons for which are explained next. Accident has a close association with a HIPO incident, as only outcomes differ. Incident is a generic term that HIPO's are a subset of. Epic is a term I had heard and used to describe an outdoor trip where a serious near miss occurred. First I reviewed the literature for definitions of these key concepts. Then I asked interview and focus group respondents to define the concepts in their own terms to get closer to meanings for them (research objective b). Comparing these helped me settle on definitions which were meaningful to respondents.

In reading the results presented in this chapter, I ask the reader consider the following:

> *Content analysis has typically been viewed as a quantitative technique ... 'Arguments against such a strictly quantitative interpretation... can be made, including these: (1) the frequency of assertion is not necessarily related to the importance of that assertion..., (2) more meaningful inferences can occasionally be drawn from qualitative than quantitative methods; and (3) emphasis on quantification of symbols and precision often comes at the cost of problem significance.'* (Guba and Lincoln, 1981, p. 242 *cited in* Lincoln and Guba, 1985, p. 338).

I request readers to examine the data holistically, not merely numerically as significance and importance do not reside in the numbers alone, especially with such a small sample. I have indicated numbers of respondents and used frequency graphs as an efficient way of

summarising large amounts of grouped and related data, so as Lincoln and Guba (1985) assert, the numbers are not an end in themselves.

4.2 Accident

Two industrial researchers defined an accident as: '*...an undesired event that results in harm to people, damage to property or loss to process*' (Bird and Germain, 1992, p.18), Further, they outlined three parts to the definition:

1. *Doesn't limit human results to injury. Harm to people includes injury and illness, as well as adverse mental, neurological or systemic effects...*
2. *Does not confuse 'injury' with 'accident'. They are not the same. Injuries and illnesses result from accidents. But not all accidents result in injuries or illnesses. This distinction is critical... The occurrence of an accident itself is controllable. The severity of an injury that results from an accident is often a matter of chance. It depends on many factors, such as dexterity, reflexes...*
3. *If the event results in property damage or process loss alone, and no injury, it is still an accident. Often, of course, accidents result in harm to people, property and process.* (Bird & Germain, 1992, p. 18).

While Priest, an outdoor education researcher defined it as follows:

> *The accident is an unexpected occurrence that results in a loss (illness, injury or fatality)...* (Priest, 1990, p. 116).

Respondents agreed that an accident involved a harm, loss or damage situation. They also agreed that accidents involved physical injury to a person or people, with four (Gintime, Bruce, Norm, George) identifying that medical treatment would be required. Phoebe, Fred and Juanita noted that it could be life threatening. Six respondents (Garth, Bruce, Agatha, Ripena, Lou and Charlie) mentioned that an accident could also involve damage or loss of equipment or property, including the environment. Bruce defined an accident thus:

> *Well, I normally think of it in terms of people, but it could be plant or equipment. I guess something where there's some physical damage occurred that required repair. So in the case of a vehicle or a piece of equipment ... something that required mechanical fixing, or in the case of a person they required medical treatment by a first aider or doctor.*

In addition, 12 said that an accident could involve mental, emotional or psychological damage or injury. Juanita's response was typical:

> *Something going wrong and having certain effects on people... physically and emotionally... [for example] fear and loss of confidence.*

Many (12) saw accidents as unplanned or unforeseeable events which were undesired or unexpected. Gintime, Janice & Ben stated that accidents were unavoidable, while Sue & Ezmerelda contemplated whether accidents were avoidable occurrences. For some it was *'where something goes wrong'* (Jane-Lee, Juanita, Ripena, Ben). Others put people firmly into the equation, specifying that accidents were caused, when something/s were *'overlooked by those participating'* (Garth, Miriam).

Phoebe, Baz and Jackie saw it as involving an interruption to a smooth flowing process. However Norm challenged Jackie and Baz on this (in FG2[7]), stating that if this was the case, a change in the weather would be classed as an accident as would a fright from seeing a snake. Elements identified by the respondents in defining accidents in an outdoor education context, largely agreed with the literature examined.

4.2.1 Discussion

Bird and Germain's definition was comprehensive and specific, covering many of the elements identified by respondents. The first sentence of Priest's definition concurred with Bird and Germain's and respondents' definitions. However there were two differences between the respondents' and experts' definitions.

First, a deal of scepticism was expressed by one focus group about whether loss to process on its own would constitute an accident in an outdoor context. Loss to process is lost time and subsequent activity interruption. Norm (FG2) challenged whether changing plans due to the weather (a common occurrence in the outdoor setting) and therefore losing time on an expedition (a loss to process) should be classed as an accident. I contend that the interruption to process on its own could not constitute an accident in an outdoors setting. Rather, it is one possible outcome of an accident. For example, if Rotoiti's fleet of six canoes were not secured onto the trailer and three came off and were damaged in transit, this accident would involve damage to canoes and loss to process. Loss to process would occur until the damaged canoes were repaired. With only three boats operational, groups

[7] FG = Focus Group

would get less canoeing time as only half the students could canoe at once, or they would have to do another activity instead. Staff time would also be lost when arranging repairs to the damaged boats.

Second, notably missing from respondents' definitions was any mention of illness which contrasts with both experts' definitions but illness definitely featured in their stories. Death was left out of Bird and Germain's and respondents' definitions, but is undoubtedly a possible outcome of an accident as identified by Priest (1990).

Finally, I acknowledge that accidents (and incidents) often result in positive elements such as learning and sharpened judgement, confirming that like risk, accidents can also have a positive side. However, experts and respondents left these elements out of their definitions. Respondents included positive outcomes in their stories though.

4.2.2 Revised definition

I propose a revised definition of an accident, specifically for the outdoor education setting. It is based on experts' definitions, deleting elements deemed specific to the industrial setting while incorporating elements identified by respondents and Priest (1990). Bold text indicates where revisions have been made.

> *ACCIDENT - an undesired event that results in ... harm to people, damage to property* ***and*** *loss to process.*
>
> *There are three parts to the definition:*
>
> *1* *Doesn't limit human results to injury. Harm to people includes injury, illness and* ***death*** *as well as adverse* ***psychological and/or emotional*** *effects.*
>
> *2* *Does not confuse 'injury' with 'accident'. They are not the same. Injuries, illness and* ***death*** *result from accidents. But not all accidents result in injuries, illness or* ***death.*** *This distinction is critical. ... The severity of an injury that results from an accident is often a matter of chance. It depends on many factors, such as* ***reactions based on skills, dexterity and judgement.***
>
> *3* *If the event results in* ***property damage and process loss****, and no injury, it is still an accident.* ***Process loss alone does not constitute an accident.*** *Often, of course, accidents result in harm to people, property* ***and*** *process.* (Based on Bird & Germain, 1992, p. 18).

4.3 Incident

Term usage in industrial research was consistent. Authors agreed with Bird and Germain, (1992) who had the following to say about incidents:

> *Another term frequently used in safety and health is the word INCIDENT. As related to safety, occupational health and fire, the incident is usually referred to as the "near accident" or "near miss." ... the incident is similar to an accident, but without injury or damage ... incidents are enormously important to safety. An incident with high potential for harm (HIPO) should be investigated as thoroughly as an accident. ... This definition of incident includes accidents, near-accidents, security breaches, production or quality losses or near-losses, etc. Both of the following definitions will be used. The context will make clear which one is intended.*
>
> *INCIDENT*
>
> - *an undesired event which, under slightly different circumstances, could have resulted in harm to people, damage to property or loss to process.*
>
> - *an undesired event which could or does result in a loss. (Bird and* Germain, 1992, pp. 19-20).

Term usage in outdoor research varied. Priest (1990) defined incidents as follows:

> *Incidents or close calls are the unforeseen happenings that do not develop into emergencies. Through effective leadership, the accident is prevented or the consequences are reduced. Incidents can be thought of as minor accidents where the losses are acceptable (cuts, scrapes, bruises, etc.). Acceptability is a personal matter. Acceptable losses to one person may not be to another. Death is acceptable to some Himalayan climbers, while a bump on the head may not be to a child's mother* (p. 116).

The National Safety Network (USA) did not distinguish between an accident and a near accident: '*An accident is a dangerous, unplanned occurrence resulting in an injury, a close-call or property damage*' (National Safety Network, *cited in* Hale, 1989, p. 11).

Limited research has been undertaken, especially using primary data, on accidents and incidents which occur in outdoor programmes. The following is an examination of the terms used in two studies and the types of events recorded.

Gentile *et al* (1992), notably, did not use the term accident in their study of the epidemiology of wilderness injury and illness. The term incident *was* used, although no

definition was offered. They used the following criteria to determine whether an event was recorded in the National Outdoor Leadership School injury/illness statistics:

> *Incidents were entered prospectively in the data base if they prevented the individual from participating in normal course activities for 12 hours or longer. Incidents were categorised as injuries, illnesses, or non-medical events. Non-medical events included behavioural and motivational problems and personal or family difficulties unrelated to course activities* (p. 854).

Being an epidemiological study, Gentile *et al* (1992), did not attempt to record lost or damaged equipment and did not capture 'near miss' events.

Paton (1992) reported on 'Health, safety and risk in Outward Bound'. This study used the following criteria for reporting results:

> *Safety 'incidents' are classified into one of the following categories: injury, illness, 'near miss', behavioural, and other.... An incident which results in a student or staff member being absent from a course for the day following the incident is classified as a 'lost day',... Total incident rates ... include incidents which did not result in a student being absent from a course for 24h* (p. 30).

Like Gentile *et al,* Paton made no attempt to record lost or damaged equipment events. However, this study did include 'near miss' incidents which were defined thus:

> *A 'near miss' is a situation which is potentially dangerous, but which ends without injury. Examples would be a rockfall close to a climber, an encounter with a hostile local person, or a suicide threat by a psychologically disturbed student.*

Little research has been done on near miss or HIPO incidents, despite Hale (1989) warning outdoor programme leaders to ignore them at their peril. Generally, outdoor studies consulted ignored them (Gentile et al, 1994; Kizer, 1994; Knutson, 1994; Meyer, 1979; Paton, 1994; Peart, 1991). Most examined injury and illness incidence, with near miss events remaining invisible apart from Paton (1994) and Knutson (1994). Definitions of accident and incident overlapped in the outdoor literature consulted and therefore remained confusing.

Although HIPO's were not always recorded in studies, they were certainly known and talked about in the field and often recognised as significant (Hale, 1989). Hale encouraged programme leaders to record, analyse, act on and network any recommendations resulting from close calls. He also described systems to carry out the above within the programme

and nationally through the North American National Safety Network. This research is therefore important in defining these significant events, making them more visible and clearly understood.

Respondents agreed that an incident either led to an accident or somehow stopped short of becoming an accident. Charlie's comment was typical:

> *An unplanned, potentially hazardous occurrence, that could have led to an accident. But it hasn't got the severity of an accident, and it doesn't usually involve physical harm or harm to property or equipment.*

Jane-Lee described an incident as 'a close call' and Gintime a 'near miss'. Other language echoed similar sentiments:

> *Where when it was over I thought whew! (laugh)* (Jane-Lee).
>
> *Anything where you catch your breath, and go haah, ooh!* (Eric).

Bill, Renal and Charlie stated that incidents *'happen more frequently'* (Bill) than accidents. In terms of magnitude of the events, respondents held opposing views. Ezmerelda typified the majority view:

> *... incident has a sense also a slight nuance of smallness.*

While Baz embodied another:

> *...[incidents] can be either small or very large, like all encompassing... accidents would be a subset of incidents.*

This contrasting view seems deviant at first, however, I think Baz is trying to express that a major incident such as a near miss is not a small affair, in fact it may include a number of minor incidents and accidents over its duration. Jane-Lee explained it thus:

> *... you can have major incidents where you think, gosh, that person could have died... which is more important than a minor accident where somebody does hurt their knee...*

These ideas came up in a previous study (Haddock, 1995) when Bill said:

> *An accident's a lower class of problem, an accident can be easily managed and an incident ... can require quite careful people management as well ... an incident could be more serious because it could lead to people getting out of control.*

Bill rated the incident he told me about as *'one of the scariest situations I've ever seen develop'* so it was not surprising that his definitions conveyed this.

Causation was pondered by some respondents (Janice, Garth, Jane, Ezmerelda) and this concept was tied in with the ability to take precautions against an event occurring, as aptly summed up by Baz:

> *...most incidents can be attributed to some cause that we could have taken precaution against but there must be some percentage and it would be interesting to see what, that couldn't be foreseen. A tree falling over in the bush or something...*

Bruce agreed with Bird and Germain (1992) in surmising that with an incident,

> *...often it's a case of luck that it doesn't go that way [to an accident].*

Miriam and Janice agreed that an incident *was 'something that you can return to your former state, and carry on your activity'* (Miriam). Janice noted that it may affect your planning or your schedule.

Agatha put her finger on a curious phenomenon, where some people may not be aware of an incident while others were acutely aware:

> *...some people may not even be aware that it was an incident. Like when a group split up, they just trotsy along and get home and may not even think about it. But it's an incident that could have led to a number of scenarios.*

I asked Agatha what sort of people may not be aware of incidents:

> *...I think ... there's still lemons amongst experienced people, and there's still lemons with me ... for whatever reason. Probably because we're human.*

While Agatha was unable to identify any characteristics of those who were more or less aware of an incident, FG3 managed to tease some of the issues out during their discussion. They identified that the *context* contributed to whether an event was seen as an incident or not; as did the *prior knowledge* held by different people in a situation. Lou, Eric and Frank discussed the issues thus:

> ***L*** *- ...do you consider somebody getting a blister being an accident?*
> ***E*** *- ...when you go for a run, and you develop a blister on your foot, it's just part of going for a run sometimes, you're breaking in a new pair of shoes, it's not really an incident. But ... a blister that develops on the second day of an eight day tramp, through dirty socks, and was slowly beginning to become infected perhaps is developing towards an incident. So exactly the same thing, in two different situations...*
> ***L*** *- Would the blister be the incident leading to an accident?*
> ***E*** *- Yeah, or was it the* ***context*** *that causes the incident?*

F - ... I don't think it can be classed as an accident because it can be stopped
L - But in some ways it's almost foreseen, if you don't do something about it you're going to have problems.
E - But it's foreseen to us because we have ***prior knowledge****, but for someone that doesn't have that prior knowledge, then ... it's become an incident...*

4.3.1 Discussion

Notably missing from respondents' definitions was any mention of illness, contrasting with experts' definitions. Medical emergency does not feature in experts' or respondents' definitions either, although these may be classed as illness. However, illness and medical emergencies featured in four stories of HIPO incidents in this study.

- teacher suffers from kidney stone (Renal)
- student suffers prolonged breathing difficulties following an asthma attack in caves (Tommy / Miriam)
- vomiting/diarrhoea bug affects 50 students and staff on camp (Jane-Lee)
- boy has vomiting illness at hut (Phoebe)

I endeavour to speculate why illness featured in industrial and not respondents' definitions next. In an industrial setting, illness can be an outcome of working in a particular environment, for example asbestosis or cirrhosis. Illness therefore becomes a health and safety issue in the workplace, especially if induced by that environment. Whereas in an outdoor setting, particularly in a school camp situation of relatively short duration (five days at Rotoiti), illness is much more likely to be brought to the setting. The remoteness of the setting then exacerbates the illness or medical problem, as occurred in the above incidents. So an integral part of the incident is the *context* (remoteness) as well as the illness or medical emergency. Perhaps respondents did not think of this in their definitions, but it certainly came through in their stories.

Priest's (1990) definition made no accommodation for luck as a determinant of the outcome of an accident / incident. Nor did he acknowledge that the leadership may not have the necessary *prior knowledge* to prevent an incident / accident from occurring (Agatha, Eric). Third, Priest's definition failed to acknowledge that an incident could be a serious affair requiring similar action to that following a serious accident, therefore ignoring the concept (and importance) of the HIPO incident. Rather, Priest treated

incidents as minor affairs of an 'acceptable' nature. This was incongruent with Bird and Germain's, the National Safety Network's definitions and themes which came through in data for this research and did nothing to alleviate the confusion and overlap between accident and incident in the outdoor literature. Therefore, the shortcomings of Priest's definition render it less useful for the outdoor education setting.

Bird and Germain's (1992) definition accommodated the conflicting definitions in the data, specifically, that incidents could be small or very large (the National Safety Network *cited in* Hale, 1989 agreed with this as well). Their approach highlighted the importance of the HIPO incident, which respondents also recognised. Their definition therefore suits the outdoor education context.

4.4 Epic

The previous two sections on accidents and incidents compared respondents' definitions to well developed theories and concepts in the literature, to check their relevance to the outdoor education setting. An epic had no such theoretical or conceptual base in the literature so respondents' ideas form the basis of a definition for a previously little researched concept. This section therefore includes more detailed analysis and theory building and relates the concept of an epic to the research.

Epics form part of the folklore and culture of the outdoor recreationist and outdoor professional alike (Charlie). Epics have several meanings (according to respondents), one of which is a 'near miss' experience in the outdoors, hence the importance of including an examination of this social construct in my study. In the absence of mention of the concept in the research literature, a dictionary was consulted to assist in its definition.

1 *a long poem narrating the adventures or deeds of one or more heroic or legendary figures, e.g. the Iliad, Paradise Lost.*
2 *an imaginative work of any form, embodying a nation's conception of its past history.*
3 *a book or film based on an epic narrative or heroic in type or scale.*
4 *a subject fit for recital in an epic.* (Allen, 1991, p. 393).

These ideas suggest links with outdoor recreation in the sense that an epic is a story of the heroic adventures and deeds of people which are embodied in the culture of those people. These ideas are congruent with Charlie's thoughts above.

In an exploratory study for this research (Haddock, 1995), the following elements common to outdoor epics were found. Epics endured over a long period of time (female respondents); they involved situations of feeling out of control (male respondents); they were experiences where lots of things went wrong so people were put in a reactive mode; they could involve a number of accidents and / or incidents; and their seriousness could range from minor to major. As a result of these findings, Haddock (1995) developed a framework to assist in the understanding of accidents, incidents and epics. The epic spectrum (Figure 4.1) portrayed the relative seriousness of types of events. It was used to plot specific events and highlighted how the same event could be perceived differently by different people (for example, students often perceived a HIPO incident as an adventure while leaders perceived it as a near catastrophe (Haddock, 1995).

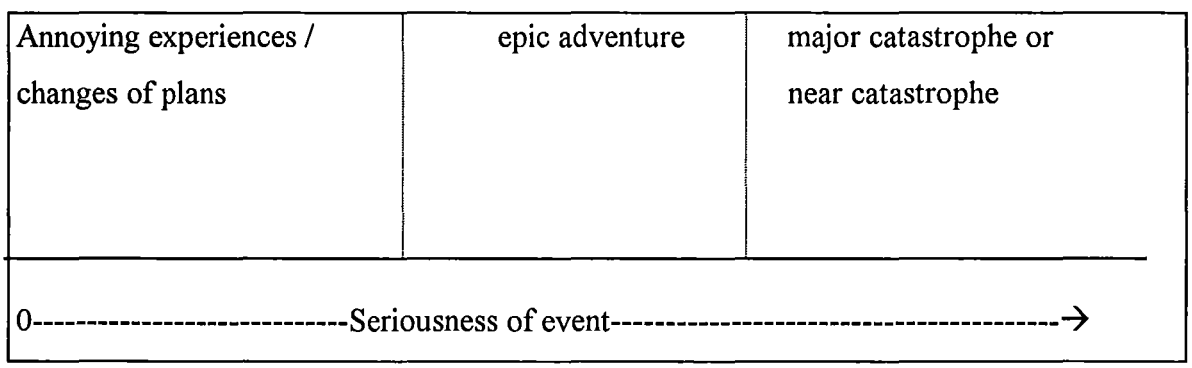


Figure 4.1 Epic spectrum.

Data from the current research was useful in further understanding epics in relation to HIPO incidents. Notably, not all respondents knew what an epic was. Of the 29 respondents involved in the study, only 16 knew the meaning of the term epic in an outdoor situation. A further six had an understanding of the term in a literary or poetry context. Significantly, those who knew what epics were, were experienced outdoors people who recreated and/or worked in the outdoors regularly. For them, epics were part of their 'outdoors' culture. Those who did not know what epics were, had limited outdoor experience apart from their involvement in school camps, indicating the term was exclusive to the outdoors culture. It was not exclusive to New Zealand however. Respondents from

England, South Africa and Australia reported it was used and understood among outdoor people in their countries. Americans also used the term (Panicucci, Pers. Comm., 1998). So the following data were collected from those 16 respondents who knew about epics in an outdoor context.

Respondents described 18 different elements of an epic. Some elements were intertwined but all contributed to the meaning/s of an epic to them. Many mentioned that an epic had two or more meanings. The elements derived from the data, are displayed in Figure 4.2 below. Together they provide a framework for defining an epic later in the chapter.

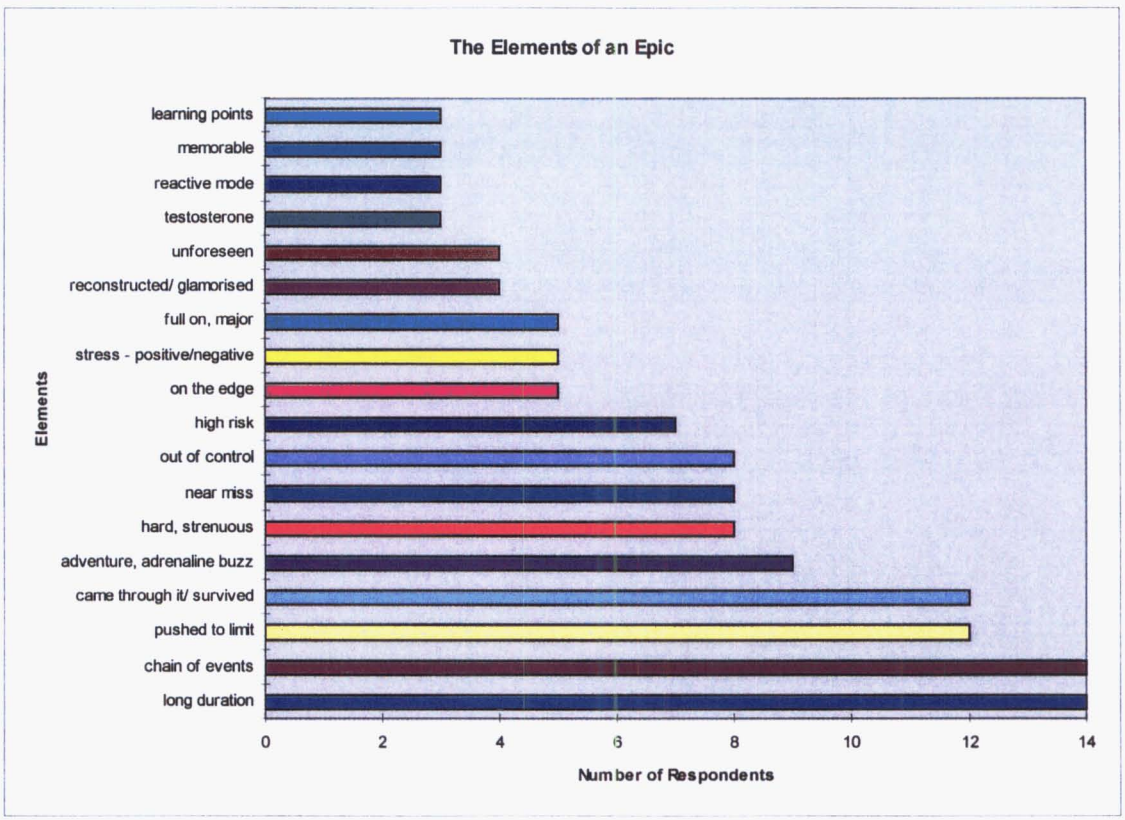


Figure 4.2 The elements of an epic

The following discussion of each element, puts them into the context they were talked about. Elements are highlighted to emphasise and relate them more easily to Figure 4.2.

Most respondents agreed that an epic was *'something that **goes on for quite a long time**'* (Fred). Eric pondered:

I don't know whether time just seems to slow down or whether it's just they seem to take longer until you're starting to run short on reserves of energy...

Ralph and Eric spoke of calling on reserves generated within the body. Garth said:

> *...[the situation] usually triggers a couple of drugs, endorphin and adrenaline... [which] causes your reaction. The reaction, based on experience, is what saves the situation.*

This is consistent with Bird and Germain's definition of an accident (section 4.2), where they contended results often depended on factors such as dexterity and reflexes. Most agreed that an epic was

> *... a situation where the **limits have been ... stretched**, as far as you can go ... without having an accident (laughs)* (George).

Most stressed that an epic was something which you *'**came through somehow** or another'* (Jane-Lee) and **survived**. Frank described it as *'a near death experience'*. Garth and Baz called it a *'**near miss**'* situation and others expressed similar sentiments. Some described it as the sort of experience you reflected back on with relief (Eric) and thought *'shit that was lucky'* (Garth, Frank) or *'you got away with it'* (Charlie, Norm, George). This was an indice of a close call according to Hale (1989) and Mortlock (1983).

Respondents agreed *'...you need **a chain of situations** happening as well for it to become an epic'* (George). To them, *'it wasn't one thing, it was a number of things that [went] on'* (Fred), *'maybe escalating'* (Norm). Several qualified these 'things' as incidents, accidents or things which went wrong. Four saw themselves as active in the process of resolving incidents during an epic. Miriam said:

> *...that person isn't safe ... or out of my own responsibility until a whole course of action takes place, and anything that could go wrong in that or things that have to keep on being done ... feed into ... the epic.*

Many respondents saw an epic as having more than one meaning. While nine saw the adventurous side of it some also recognised those with less experience may not.

> *... epic **adventures**, that would mean heaps of fun and long duration or maximum **adrenaline buzz**. That would be for myself really* (Jane-Lee).

In contrast,

> *...an epic involving me being with people of less skill, would be that things have got really hard for them, probably upsetting ... needn't be that anything had gone wrong, or people had got hurt, just that ... it took a lot of energy for us to get back I guess* (Jane-Lee).

While some saw it *as 'a very long and arduous physically and mentally challenging situation'* (Jane). Eight agreed that it could also be a long **hard** trip in the sense of being physically **strenuous**. Charlie said:

> *...an epic journey ... could mean a very long trip, hard trip, and it might be ... deep snow and long distances or conditions might be particularly difficult but you've actually got there and achieved it and that can often be referred to as an epic* (Charlie).

A long hard trip could mean different things for people, depending on their level of experience as illustrated by Juanita and Ezmerelda in FG5.

> ***J** - For us it was an emotional epic... for them it was an absolute physical epic because they had never been in those conditions...*
> ***E** - It was still an epic for you...?*
> ***J** - Emotionally, yes. ...in the end physically also because you had to change your whole way of tramping.*

And Lou in FG3: *'I mean for these kids, going up the Lake was an epic... Just with the hardship involved when it was ... not something they're used to'.*

Seven respondents felt that an epic involved danger and **high risk**. While 12 expressed epics as events where they **pushed their limits** to the edge of their competence, others went further to say it was where *'you're extended, beyond your safe operating zone'* (Eric, Spur). So, epics were **out of control** situations to eight respondents. The adventure experience paradigm[8] first proposed by Martin & Priest (1987) is useful in the analysis here. Figure 4.3 (below) shows an adaptation of this model.

Those respondents who talked about epics as experiences where their limits were pushed, were talking about operating in **C** zone on the model. This was a zone where competence was slightly less than the difficulty of the task/s they needed to perform, so they were 'pushing the limits'. A lot of learning takes place in this zone where the situation is challenging.

Several (five) said an epic was where they were *'**on the edge**'* (Agatha) or *'on the line'* (Frank). This figurative two edged sword may be the 'fine line' between pushing the limits and being out of control, illustrated by the black line between **C** and **D** zones.

[8] This model has been adapted several times (Davidson, 1992; Haddock, 1993; McConnell, 1989; Priest and Baillie, 1987).

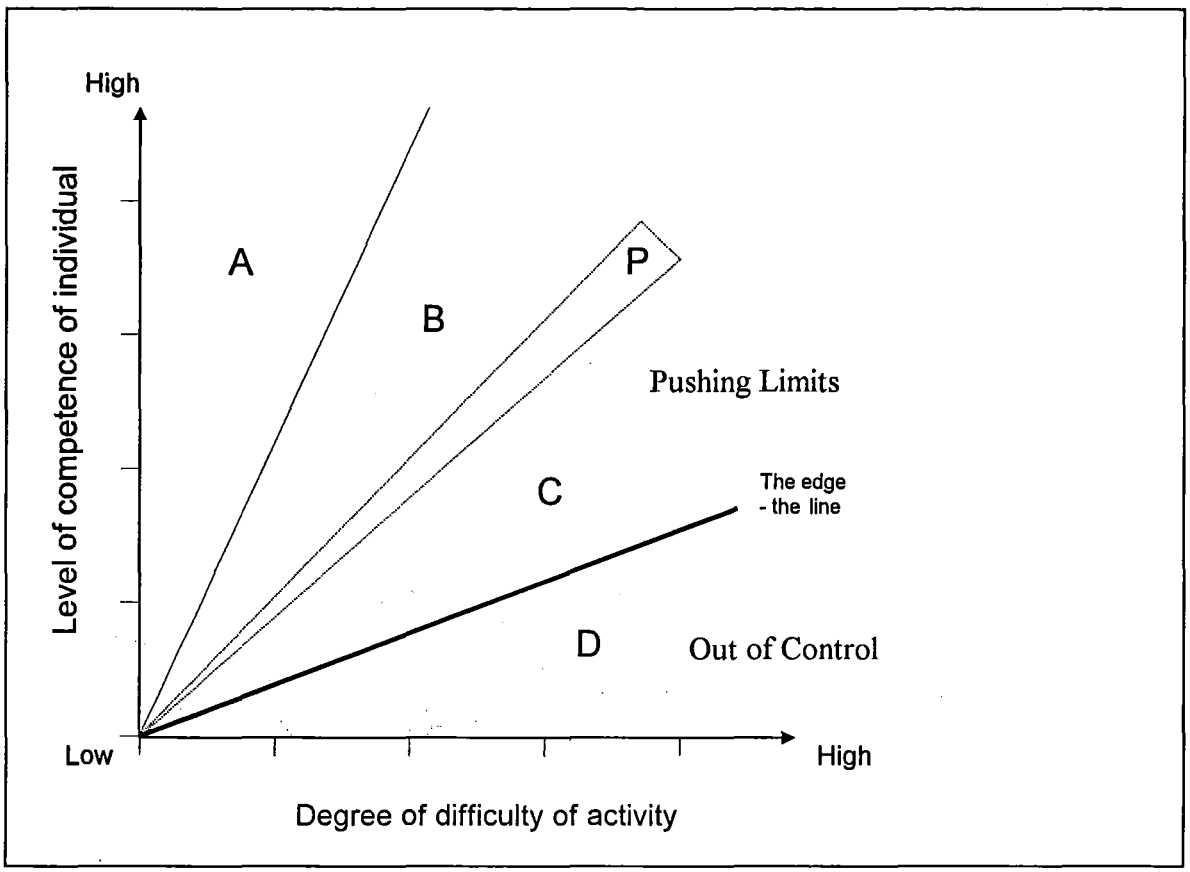


Figure 4.3 Operation Zones Model (adapted from Martin and Priest, 1986).

The following operation zone descriptors are illustrated in Figure 4.3 above:

A Boredom zone was where competence was far above the difficulty of the task. There was no stress and it could be boring.

B Cruising zone was where competence was comfortably above the difficulty of the task. There was low stress as you were within your comfort zone.

P **Peak Experience** zone was where competence matched the difficulty of the task. This well researched state of being was described as 'flow' by Csikszentmihalyi (1975). There was positive stress, and a sense of adventure.

C Challenge zone was where competence was slightly less than the difficulty of the task. There was positive stress as you pushed your limits and learnt more.

The **edge - The 'fine line'** between **C** and **D** zones, between pushing your limits and being out of control. There was high negative stress bordering on panic.

D **D**istress or **D**anger zone where competence was far below the difficulty of the task. There was extreme negative stress, a feeling of being out of control and a serious accident or near miss was highly likely in this zone.

Some respondents described epics as **unforeseen, full on,** serious events which put them into a **reactive mode** where *'things ...have to keep on being done'* (Miriam). A major feature of an epic was that people **survived** to tell the tale. Garth said this was *'...because your reactions are so good that you're able to stop [a disaster] just in time'*. Others thought avoiding disaster was more to do with luck than good management. This sounded like **D** zone, where they neither had the skills nor the experience to cope with the situation, a potential danger zone. Negative stress and a feeling (or reality) of being out of control featured here.

Perhaps an epic is born out of the perception of feeling out of control. Martin and Priest's (1985) original model of understanding the adventure experience, illustrated how astuteness contributed greatly to one's perception of an adventure experience. According to them, experienced adventurers were more astute in their perceptions of risk, so a period of being out of control (in D zone) would be accurately perceived as a close call. Whereas novices had less astute perceptions (and events may be in the control of astute leaders) so although they perceive events as being out of control (D zone) it may actually be a challenging situation (C zone) or a peak experience. Juanita, Agatha and Jane concurred with this, stating the amount of control people felt they had in a situation largely depended on each person's perception.

> *...in that situation they felt out of control, they felt this situation, they're not in control of it, but we didn't feel it* (Juanita).

> *The essence of an epic would be ... the perception of being out of control, whether it is real or not real...* (Agatha).

Five teachers stated that epics involved a good deal of **stress.** Spur and George identified two contrasting types of stress, harmful and exhilarating. Spur said:

> *...they maybe stressed in some way* ***positively or negatively****... Positive stress is having an epic adventure involving paddling from here to the head of the Lake, and buzzing as a result of having achieved that goal, and that's a form of stress ... and the negative side of that may well be if some sort of incident has occurred whereby there is some damage to body, mind or soul.*

Garth and Agatha claimed a link between **testosterone** and epics. Charlie linked epics with New Zealand culture, particularly male culture:

> *... part of the culture here (New Zealand) is coming back to the ... colonial heritage ... thing... there's been a bit of a tradition of the good keen man and roughing it out there and it goes back to the gold prospectors ... particularly ... amongst males ... in the past it was more a case of maintaining an image of a tough kiwi bloke or blokess as the case maybe...*

Agatha, Garth, Charlie and Baz intimated that epics were **reconstructions** of events to show them in a different, more positive light.

> ***Charlie** - The New Zealand framework here is that, sometimes ... it's a polite way of avoiding saying that we stuffed up, you know, covering yourself and then calling it an epic instead. Most people who have spent a bit of time in the outdoors have had epics, I don't really know of anyone, if they were honest about it, who hasn't, ...there has been some lack of judgement ... if you look back and analyse it all.*
> ***Baz** - I think one of my epics would come under that category quite well ...my epic title is probably covering up for the fact that ... our weather forecast research wasn't brilliant, ...I didn't have my crampon adjusted as well as I could have... So those weaknesses in my planning probably led to what I'm now calling an epic.*

While Charlie and Baz saw epics as reconstructions or euphemisms, Agatha saw the re-telling of an epic as an opportunity for exaggeration:

> *But at the end of it it's sort of like the long fish, y'know catching the big fish? And it gets very distorted by drama and all sorts of other things... So it ... has a certain amount of testosterone floating around in it (laughs)...later on ...it has a **glamorous** sort of side to it ...it suddenly gets bigger and better and more close to the edge...*

Hale (1989) concurred. He identified an important indicator of a close call was when *"the individuals and the group ... express ... relief through exaggeration and humour."* (p. 11). This may be to give the story-teller kudos and admiration from their peers or as Garth put it *'later on it gets a bit of hero status.'* Risk is a socially valued behaviour according to some authors:

> *Taking risks indicates courage and forcefulness, and is generally more highly valued than conservatism. Most people, particularly men, tend to respect and admire others who are willing to take risks. Being in a group reinforces the importance of the social desirability...* (Freedman *et al*, 1970, p. 201 *cited in* Allen, 1980, p. 63).

Given the above, it is not surprising that outdoor people indulge in storytelling about their epics, as it is an opportunity for folk to grandstand their risk-taking behaviour and gain social favour for it. The temptation to exaggerate and euphemise their experiences is also understandable. Given that the outdoors has traditionally been dominated by male imagery

and men in particular tend to admire risk takers (Freedman *et al*, 1970 *cited in* Allen, 1980) it is not surprising that a connection between testosterone and epics was made. I hasten to add that testosterone is not a hormone restricted to males.

Charlie noted he felt the culture of covering up mistakes in the outdoors was beginning to change. During FG2 he said:

> *... I think it's only starting to change now that people actually analyse what they are actually doing themselves and actually looking and saying 'well hey, I could have done that better or, this is what I did that led to that'.*

Eric, Charlie and George noted that epics were **learning points** which could make a group *'richer for the experience'* (George). Garth, Charlie and Norm stated the obvious, that epics were **memorable** experiences and *'stuck in people's minds'*. This latter point was an advantage in this research, as memorable experiences are much easier to recall after several months or years than everyday experiences, which rely much more on schemata and scripts (Philipchalk, 1995; Woike, 1995).

4.4.1 Many meanings

The data revealed an epic was a complex concept which had more than one meaning. *'I think we use the word lots of ways'* (Jane). An epic could have different meanings for different people, depending on their level of experience. Three strands of meaning for an epic were juxtaposed by respondents. All began from the premise of a long arduous trip. On one strand, the epic would remain a long hard trip. On another strand, it could become an epic adventure involving long duration with the fun and exhilaration of achieving a goal. This would be a highly positive experience. On yet another strand, an epic could be a long hard trip which also involved a close call in a high risk situation, akin to Mortlock's (1983) misadventure, so is part of the subject matter for this thesis. This was a negative experience with folk *'realising how lucky the people have been to get away with it'* (Norm).

The three different types of epic described by respondents are illustrated on the revised epic spectrum below. While Figure 4.4 mostly matches the original epic spectrum (Figure 4.1), there are two exceptions. First, it shows how all epics emanate from a long and arduous outdoor experience as analysis of the current data revealed that these elements formed the

basis of all three types of epic. Second, the category on the left of the spectrum, originally entitled 'annoying experiences, changes of plans', is re-named 'long hard trip' in the revised version and shifted one place to the right.

The annoying change of plan had the *effect* of adding length and hardship to a trip, so the descriptor was changed to reflect this, as aptly described by Baz:

> *... part of the definition of epic would be that something or some journey took longer than expected, that seems to be a common theme that there was a change of weather or the rivers were flooded and you couldn't do this and had to go around another way ...*

The 'epic adventure' and 'close call' category names remain unchanged. Categories are arrayed from least risky on the left of the spectrum to most risky on the right, to display the relative seriousness of events.

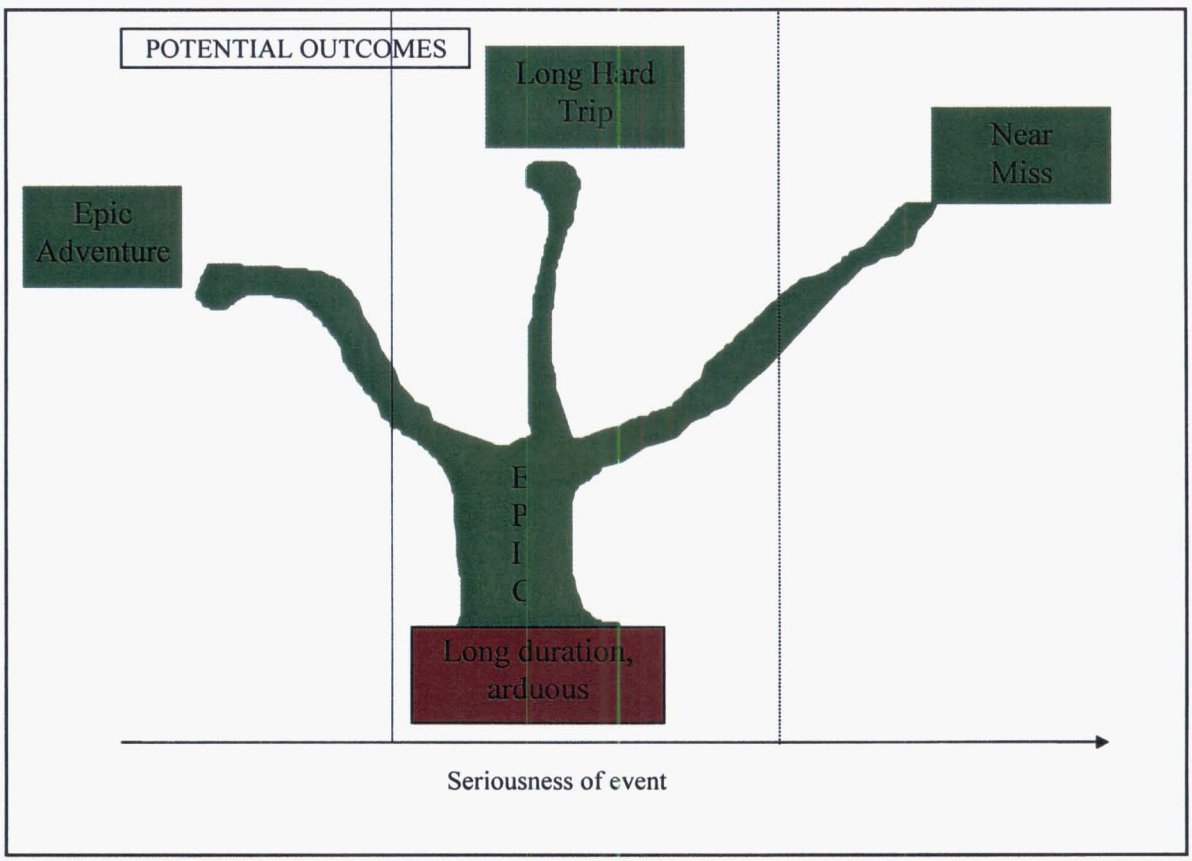


Figure 4.4 The epic spectrum [revised].

At first, the long hard day manifestation of an epic did not appear to be of concern in this study. However, respondents provided a clue to the long hard day's significance in a study of three plus incidents (on Albrighton's (1993) risk assessment matrix). Baz said:

> *But for me an epic might be ... a really long day for instance... a 14 hour tramp... sure it was hard work but it wasn't an incident it wasn't an accident it wasn't dangerous, you just look back at it and say yeah, that was a real epic ... and perhaps you would be putting yourself at risk if you ... have pushed your limits but perhaps you aren't aware of putting yourself at risk. Like maybe you're really tired and in an outdoor situation that's a risky one.*

So a long hard trip does not constitute a three plus incident in the outdoors, but it may be a significant contributing factor to a HIPO incident. This proved to be so in two incidents included in this study (Phoebe and Fred/Bill b).

Finally the elements discussed, together provide a framework for the definition of the HIPO incident manifestation of an outdoor epic, which follows:

> **EPIC** A *long, hard, strenuous outdoor trip, involving a chain of events which puts people in a reactive mode and pushes their limits to the extent of feeling out of control. It is a full on, major, unforeseen event involving perceptions of high risk and adventure which produces negative and positive stresses. Memorable learning experiences that people survive, they are often glamorised afterwards, creating the 'epic'.*

4.5 Relationships between the concepts - accidents, incidents and epics

To find out more about how respondents viewed accidents, incidents and epics, I asked some focus groups and interviewees if the three types of events were related in any way. I found that they were, but while related, they also differed. Respondents expressed relationships and differences in terms of: time; degrees of severity consequence wise, in importance, size / magnitude of event; main effect/s being negative, psychological, physical; frequency of occurrence; one leads to another; confusing lines between them; determining factors of context and prior knowledge.

Ezmerelda saw time as a determining factor for event types, with *'the incident [being] the shortest of all ... and an epic long and drawn out.'* Many respondents alluded that incidents and epics had less severe consequences than accidents. Jane-Lee, Baz and Jane agreed that the reverse could sometimes be true, as described earlier.

Jackie found *'incident and accident extremely confusing in terms of where you draw the line between ... them.'* To Tommy and Sue they were similar types of events. While others (Norm, Jane-Lee) verbally placed events on a degree of severity continuum thus: 'incidents, accidents, epics.'

Charlie, Norm, Baz, and Spur agreed there were more incidents than accidents or epics.

> *... like a pyramid with a whole lot of incidents out there, and if one of them goes a bit further, it becomes an accident. [Jackie agrees]... and if it goes a bit further it becomes a serious accident and then if it goes further it's ... a death or disaster ... so basically ... all accidents are incidents, but not all incidents ... lead on to accidents, it's a degree of severity thing I guess. ... I don't think epic fits in the continuum, an incident, accident and epic, I think ... if you're going to use epic, it should come between incident and accident because, an epic doesn't necessarily involve an accident, but an accident is when ... harm did come* (Charlie).

This is a variation on Bird and Germain's (1992) Accident Ratio Study pyramid (Figure 1.1). Eric and Frank added a useful category to the less severe end of the spectrum:

> ***E-*** *Like I guess an incident is everything to my way of thinking ... from what you planned, and what you find acceptable and what's just part of the norm, through to the beginnings of an accident, so it's that area between.*
> ***F-*** *O'kay. So you've got normality, incidents, accidents.*

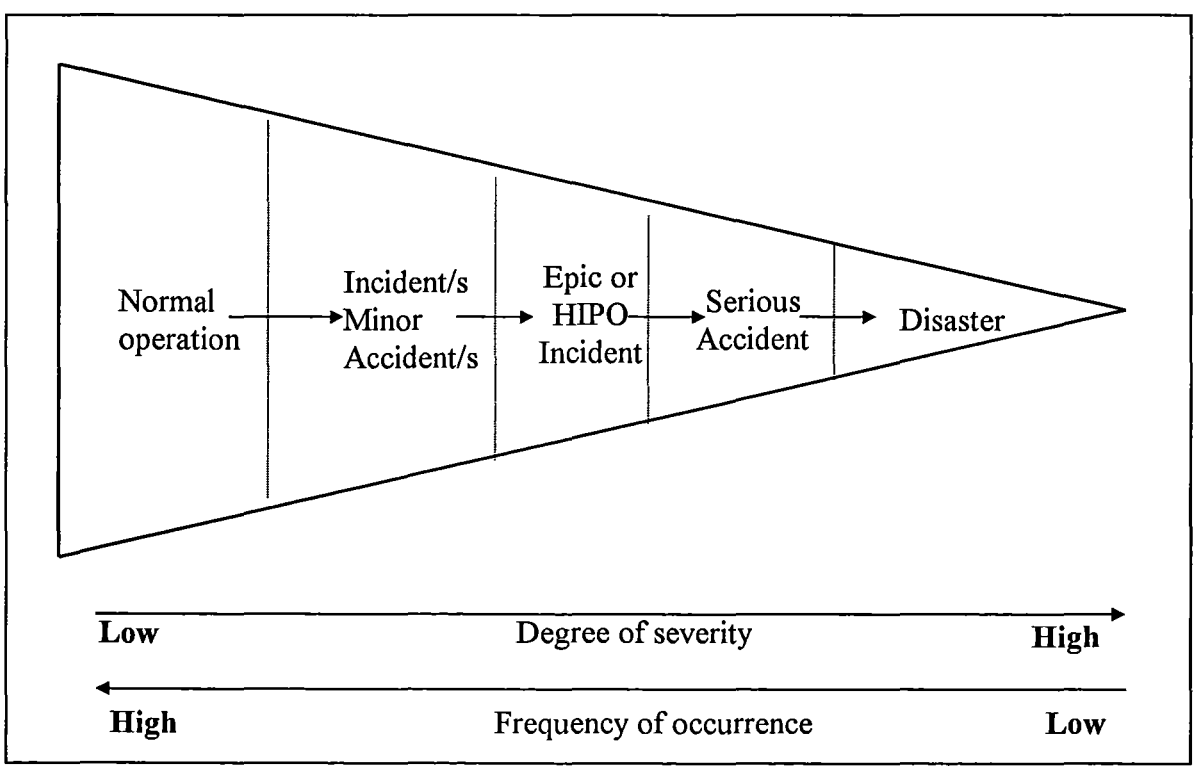


Figure 4.5 Pyramid of events

I have tried to capture most of the above discussion in Figure 4.5 above. The pyramid shape shows the frequency of occurrence, with most frequently occurring events at the base of the pyramid and least frequent at the apex. I have placed the pyramid on its side to emphasise the continuum idea. The linking arrows indicate that certain less serious events can lead to a more serious event. The relative degree of severity of events is represented by the continuous arrow beneath the pyramid and the decreasing area toward the apex of the pyramid, showing the least frequent events as most severe.

On further discussion, an ambiguity of these relative positions emerged. Accidents, incidents and epics did not fit neatly on to a continuum of severity. This ambiguity led to the development of the original epic spectrum, where epics could be arrayed anywhere on the spectrum according to their relative degree of seriousness.

4.5.1 The event tree

FG2 found it hard to reconcile all of their ideas on a continuum, so they abandoned it, and George branched out with a new framework, the event tree (Figure 4.6). The following excerpts show the framework's development. In George's words:

> *I think you've got a branch and fork coming out...a tree shape with incidents at the base of the trunk and coming up to ...a trichotomy as the branches... so that your incident could develop into an epic... an accident, or... a disaster. ... [The trunk represents] a series of incidents or accidents that collectively contribute to an epic ... [or other branch].*

Each branch represented a possible outcome if incidents or accidents went unchecked. Others added to the framework:

- *... each of the roots of the tree are individual... factors or incidents, ...causes: ... environmental factors, lemons, just weather... how bad the rock is up on the ridge and anything like that* (Charlie).
- *No follow up ... on previous incidents as well...* (Ralph).
- *The people involved in the activity* (Norm).
- *People, environment, equipment!* (Charlie).
- *This... here... is the event horizon...[pointing to soil surface] ...That is when all the causal factors, there's some instant in time, where they all intercept...To make some sort of incident...it might just be a probability [thing]... rolling dice* (Baz).

The Event Tree below was drawn as their ideas emerged through discussion. I have added the arrow from the epic spectrum, to indicate the degree of severity of events to complete the framework. This framework provided the idea for and further refines the epic spectrum.

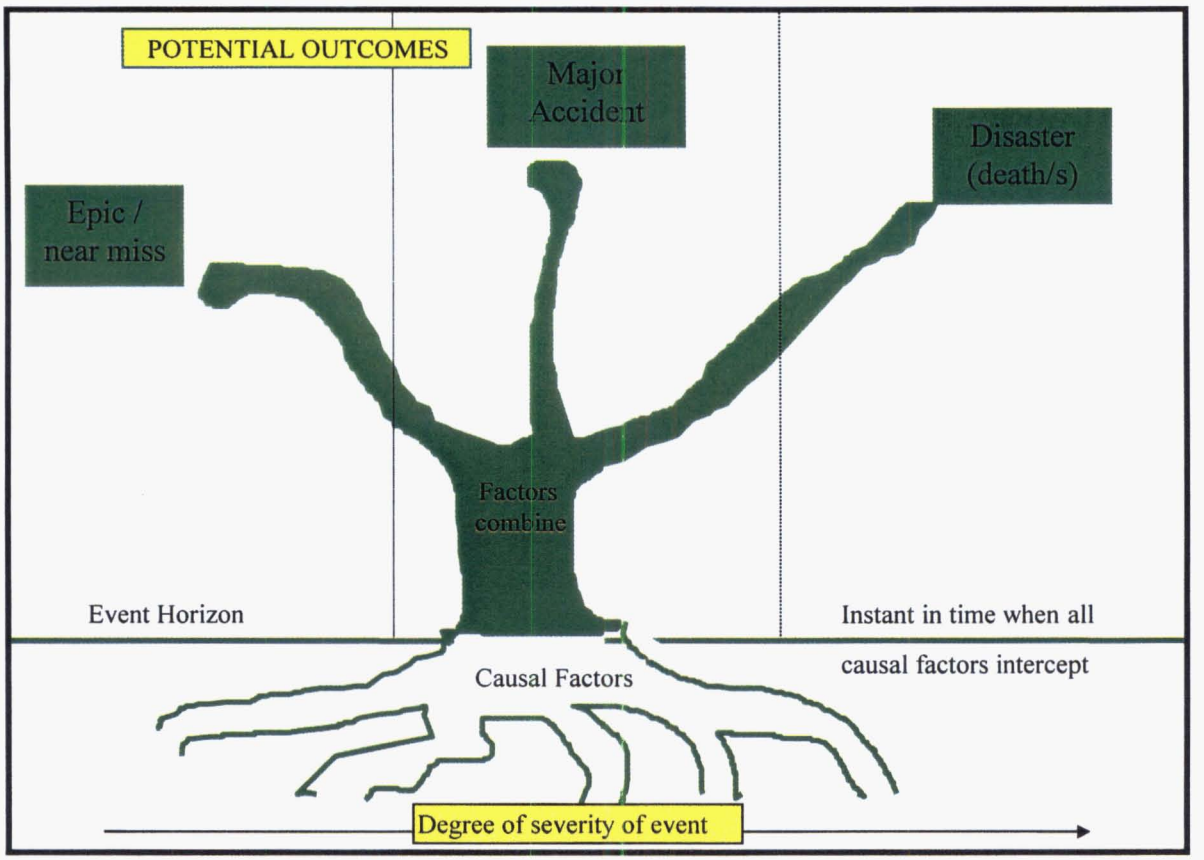


Figure 4.6 The Event Tree

4.6 Meanings of a high potential incident

This section examines the meanings of HIPO incidents for respondents. For most, HIPO incidents meant learning experiences. They provided a range of useful opportunities such as: *a serious practice exercise, a test I felt we passed* (Miriam); *sharpening judgement* (Norm); *learning your bounds and limitations* (Frank); *self learning about your own needs and comfort levels* (Renal, Janice); and *learning from your mistakes* (Frank, Juanita, Jane, Ezmerelda). Sue, Jane and Eric noted that it was better to learn from others' incidents, so you did not have to go through it yourself.

Several contrasting meanings for a HIPO incident emerged from the data. Some interpreted it as a warning to alter something in order to avoid an accident later while others implied that certain events were unavoidable. Those subscribing to the former meaning said a HIPO incident to them was like a: *tap on the shoulder* (Jane); *wake up call* (Juanita, Bruce); *warning bell* (Spur); or *reminder (*Janice). This type of meaning prompted in many respondents questions like:

> *... what could I have done that might have avoided that incident happening? ... or what did I do that might have led to it, or what didn't I do that might have prevented it?* (Charlie).

Jane said: *'I'd feel quite disgusted in myself if I should of avoided it.'* Baz said *'there are freaks of nature...avalanche [etc]'* arguing that some events were unavoidabe. While Charlie argued the opposite:

> *... even when it comes to situations where people say oh, it was just rock fall or it was just a wet snow slide that knocked us off our belay, or it was just a bit of frozen ice on the track. Some people will look at all of those environmental things and say if you looked at it very closely ... that particular gully you were in was a trap for rock fall and ... that particular time of year was prone to wet snow slides ... or if you walk down that track it would ...often be icy at that time of year and if you'd really done your complete risk assessment ...in that particular location, in those particular weather conditions ... then that may have avoided the incident. So, you know, some people say that there's no true unavoidable accidents, other people say there is ... you can't control what happens out there. That perhaps is a debatable one.*

Others thought some may see HIPO incidents as inconsequential 'one offs' requiring no action at all. Norm said:

> *I'd say most of the time it's just brushed off... [I doubt] whether they see the frequency and all that sort of thing, I think basically they probably don't. They see it as a one off thing rather than something that might be recurring, maybe leading to an accident in the future...*

These thoughts are substantiated in the literature. Helms (1984) reported that the great majority of serious mountaineering injuries and fatalities examined in two studies, were preceded within one year by a near miss incident or an accident of a parallel nature in the same area. Kauffman (1989) identified crucial factors involved in one specific mountaineering accident involving multiple fatalities. Both reported that although the same factors (causes) had been present in previous years the group had done the trip, the leaders had failed to recognise them as important.

Ben touched on an interesting, different meaning for why some might appear to brush off a HIPO incident:

> *... maybe they just were afraid to admit it and glossed over it... human nature being what it is ... [maybe] they're insecure.*

There is support for Ben's thoughts in the literature. As discussed in Chapter Two, Baron and Byrne (1994) contended that people naturally wish to protect their self esteem, and prefer to be

seen in a good light. This phenomenon is the well researched self serving bias or attribution theory. A HIPO incident may be brushed off by attributing the cause to external factors, thereby hiding any personal responsibility for it. Alternatively, Hunt (1986) surmised that adventure was a sign of incompetence. So perhaps they reconstruct events to avoid appearing incompetent, turning it into a heroic epic adventure instead, as discussed earlier.

To Bruce, Garth, Tommy, Fred and Agatha, their HIPO incidents meant a real affirmation of safety practices and systems in place, which enabled them to cope better with the serious situation. Bruce said:

> *...it reiterated my thoughts or understanding that it's very important to have cover or shelter with you at all times when you're out in the hills with groups of students, because you never know when you're going to need them ... and ... the students ... they had the right gear with them.*

Bruce was co-leader of a party of 16 sixth form students on a three day snow craft expedition on the Robert Ridge. On day three of the trip, after spending the night in snow caves, the group headed out via a snowy summit then off-track down a spur through bush and out a river valley. Half way down the spur, out of the snow and onto rock, tussock and scree, a student slipped and badly twisted her ankle. This effectively immobilised the group for the next three hours until a helicopter came. Bruce said:

> *The worst situation at the time was that the weather was not very good, there was low cloud, low visibility, and a really strong ... southerly wind, which made things very cold. So the other students were getting cold very quickly ... luckily we had some tent flies. There had been some discussion, because we were going to get out that day, whether we would take those tent flies or not. ... there were groups coming behind, who could've ... made use of the flies. And it would've made our travel a little lighter but I believed that we needed them for the safety and after a brief discussion, we decided to carry them ... so we managed to get ... several of the kids ... under one fly in beside the person who was injured, because she was a little bit cold ... then we got the others under another fly. We didn't actually pitch them, because ... we were on snow tussock and ... there was no real place to sling them ... just getting people inside them ... out of the wind ... I checked several times, and the temperature inside those ... shelters was actually amazingly warmer than on the outside.*

Another positive meaning of many respondents' HIPO incident experiences was the strengthening effect it had on their groups:

> *...but what happened to the rest of the group was a real strengthening of the group so immediately we rallied around and supported one another and it was amazing the*

> *strength of the kids who ... were associated with the boy who hurt himself ... it was just something I didn't know that these boys had in them really* (Janice).

And themselves:

> *I felt quite proud of what I'd done ... I thought I'd done a good job* (Tommy).

There was no doubt from the responses that most HIPO incidents were significant events for my teacher and instructor respondents. Tommy said his HIPO had a profound effect on him. Others reported exceptional feelings (see section 5.3) during and after their incidents, reinforcing the significant meaning of this type of event for them. This concurred with Woike (1995) who found that *'affective MME's [most memorable experiences] are likely to be considered salient and important'* (p. 1089). They either shuddered at the thought of what could have happened, or felt relieved and glad to get away with it, or both. A HIPO incident was a negative experience for most, especially in the short term. For example, Spur imagined newspaper headlines. But respondents said it was also mixed with positive outcomes, not the least of which was the learning that came from the experience as discussed above.

4.7 Risk acceptance

Risk acceptance was an important aspect of the meaning of an incident. Many respondents had a certain amount of acceptance and expectation that incidents would happen during outdoor experiences (Jane, Gary, Frank, Spur, Garth). Lou said:

> *Yeah, I mean in some ways, it's a hard thing, but the only way you ever learn is through incidents. And you hope that they never turn into accidents.*

Ezmerelda, Jane and Frank said that with students, it was important *to 'give them the freedom to ... stuff up'* (Ezmerelda). Jane felt there was value in them learning from their own mistakes: *'I mean it's just as simple as if you get burnt by a hot primus, you're not going to ever do that again are you?'*

Risk to these folk was part of the attraction of the outdoors:

> *I think if you didn't have incidents, it wouldn't be worth doing things... [but] I think there's an acceptable limit* (Frank).

But what was this limit? Some incidents were seen by respondents as unimportant (and therefore acceptable?), while others clearly were not, as this excerpt from FG5 shows:

Jane *...those incidents ... like ... on a ski field and a kid falls and breaks her arm I don't really care about that incident, in the sense that I've got her on a field, where they are beginners and its appropriate to her level of skiing and its just ... 'c'est la vie' ... everyone knows the risk of going skiing ...*
Janice *If you just slip the wrong way.*
Jane *So I don't give that much energy at all ...*
Juanita *Yes, some ... you just ignore ...But some of them ... just wakes you up!*

FG5 discussed the acceptance of certain incidents from their own perspectives as outdoor leaders, however as Priest (1990) pointed out, some incidents may not be acceptable to a child's mother. The earlier discussion of societal acceptance and tolerance of risk is useful in the analysis here. Societal risk tolerance was related to values not accident statistics (Douglas & Wildavsky, 1982; Ewert, 1989b). The literature did not agree on an acceptable level of risk for students attending outdoor education activities. What was clear, was society expected a high standard of care when outdoor leaders and institutions had responsibility for students. So it is questionable whether the statements made by staff above, would hold up to society's scrutiny.

4.8 Chapter summary

Part of research objective 2b was to settle on definitions of key terms which were meaningful to New Zealand teachers and instructors in an outdoor education setting. Terms examined were accident, incident and epic. Commonly used and accepted definitions, based on the work of recognised overseas experts in industrial safety management and adventure education, were compared with respondents' definitions of the terms accident and incident. In both cases industrial, not outdoor definitions, most resembled ideas which emanated from the data. Thus, respondents' ideas were used to give a new accent to Bird and Germain's definition for incident, making it more relevant to the outdoor education setting.

No definition for an outdoor epic was found in the literature, so the dictionary was examined along with respondents' definitions. Common features were extracted and three distinct meanings of an epic were distilled from the data. One was found to relate to the research topic of HIPO incidents and a framework of elements which contributed to it assisted in defining this concept. Relationships between accidents, incidents and epics were also examined. Incidents and near misses were placed among accidents, death and disaster

on the revised epic spectrum, graphically illustrating visible and invisible events side by side. High potential incidents took their place as serious events and the outdoor epic story was finally seen for what it was, a way for people to make significant near miss events visible, whilst maintaining face in a culture quick to judge stupidity whilst quick to revere heroic deeds. This revelation brought credence to Hunt's (1986) view that adventure was a sign of incompetence. Thus HIPO incidents in outdoor education were found to be meaningful to respondents, and synonymous with 'a tap on the shoulder' before a disaster.

Finally, respondents agreed that part of the attraction of going into the outdoors was the risk involved. There was also value in students learning from incidents but there was an acceptable limit. This limit was not agreed on by respondents nor in the literature. However, society expected a high standard of care when outdoor leaders and institutions had responsibility for students, but the extent to which respondents were aware of this was unclear.

CHAPTER FIVE Effects of HIPO incidents on those involved

5.1 Introduction

To further determine the meaning/s of HIPO incidents for leaders of outdoor education activities, effects on those involved were examined. After interviewees told me the story of a HIPO incident they had experienced, I asked what effect, if any, it had on them. They reported physical effects along with effects on their: feelings and emotions; respect for, trust and confidence in colleagues; leadership and involvement in outdoor education. I also asked how others were affected by the event, to their knowledge. They reported their observations of effects the incident had on students, the victim, assistants, colleagues on camp and people back at school (staff and students).

5.2 Physical effects

Interviewees reported feeling seven different physical effects during or after an event: stress or tension; raised eyebrows; adrenaline; sick/ nauseous, butterflies, sweaty palms; pain; sinking feeling in stomach; dog tired. I will now discuss these in context.

5.2.1 Stress or tension

The physical effects respondents described above are symptoms of stress according to Ewert (1989c). Other authors identified similar stress symptoms (Bunting, 1995; Mabery, 1994; Mobley, 1981).

Gintime, Tommy, Miriam and Phoebe felt stress or tension at the beginning and during their events. This is natural and although others did not mention it, I suspect they did also. Even though Spur was not present when a student had breathing difficulties during an unsupervised lake swim 50 metres from shore, he felt stress and raised his eyebrows on hearing about it afterwards. Phoebe's story was about her first leadership experience at the Lodge. She led a group of 14 students by herself, on a three hour tramp through bush to Lakehead Hut. She was nursing an injured leg (a torn sheath of muscle) on the trip, which happened several weeks earlier. Before she even left on the trip she said she felt:

Nervous, I was feeling sick, nauseous, (laugh) I had butterflies, and whenever I get overly nervous the palms of my hands just cold sweat and I kept wiping them ...

Raffan (1984) showed how stress levels fluctuated during a typical crisis in Figure 5.1 below. A typical crisis (broken line) involved a slow increase in stress as the seriousness of the situation was realised, followed by fluctuations in stress levels as trial and error solutions to resolve the crisis were attempted, followed by a slow return to normal stress levels as it was resolved.

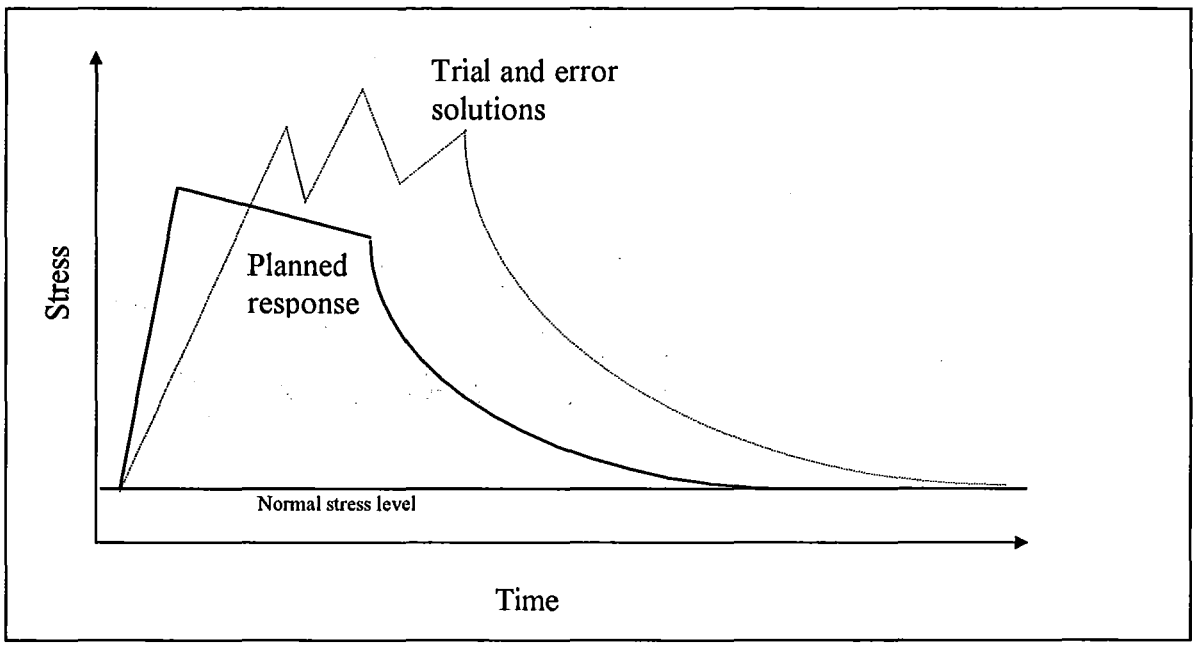


Figure 5.1 Profile of a typical crisis (Raffan, 1984, pp. 9-10).

Gintime's story about losing a group of 14 students fitted this pattern. She said:

Well it started off they were getting wood. Then we realised, shit it's quiet! ... then we ... started yelling out and there was no-one around and then I remembered the kids talking about the hut [an hour away] on the other side [of the river]... so we shot across on the canoes ... to see if the kids were over there... we probably had an hour of daylight left ... I was worrying whether those kids would try to cross the river ... they didn't really know the tracks, and did they have any torches or proper gear?... We got over to the hut and found they weren't there ... Damn! They're over there on the track somewhere ... [so] we dispersed ... I was going to back-track, [the others] went around the other way ... and by the time we went back they were waiting [at the campsite] for us [just on dark] ... I could have rung their necks!

Conversely, a managed crisis (solid line) involved a quicker increase in stress levels as the situation was evaluated more promptly, followed by a managed response to the situation, followed by a quicker return to normal stress levels. Garth's incident followed this pattern. A

qualified nurse and outdoor instructor, he discovered a very cold student at the end of an afternoon building snow caves with a sixth form group. He explained his response:

> *Let's go to the system that is required for this situation... well I went into the ... hypothermia drawer. Yeah, she's shivering and that's good... how cold is she?... is this situation gonna require help outside what we've got here? ... open that drawer, open the potential rescue drawer ... open up the resources at the time drawer, and just see what you've got. And as you deal with the situation, try and ... tick 'em off and take what you need and sort it out.*

5.2.2 Adrenaline

Tommy implied he was running on adrenaline when helping with a student who'd had an asthma attack and subsequent breathing problems during a caving trip. It took three hours to evacuate her from this difficult environment. He said:

> *...adrenaline's an incredible thing isn't it and I know afterwards I felt that great sort of ... feeling of Gor Blimey what the consequences could be, and I know that night in here I sort of basically ... [was] wandering around in a daze...*

Garth, had a different view on adrenaline.

> *...I was in a crash team ... in Australia ... I've ... done enough of that sort of thing ... and years of rock climbing, and adrenaline's a no no ... you steer away from it.*

These two different physical responses to serious incidents could reflect the amount of experience they each had in emergency first aid situations in the outdoors. Tommy had spent years as a volunteer first aider, and had come on many school camps, but had not had a comparable amount of experience in the outdoors in his personal recreation, he was not an outdoor educator and certainly not an experienced caver. Whereas Garth was an experienced professional in both emergency medical care and outdoor recreation, and also felt comfortable in the alpine environment in snow, so it is not surprising that he did not run on adrenaline while responding to the crisis while Tommy reported he did.

5.2.3 Pain

Two respondents suffered physical pain during their incidents. Renal felt intense pain as he was trying to pass a kidney stone at camp. Phoebe, suffered pain tramping with a pre-existing leg injury. She dealt with a boy who ate too many sweets during the tramp and

vomited all over himself and his sleeping bag that night. Phoebe spent considerable time cleaning up the mess, complicated by her leg injury and the bad weather:

> *... when I washed the sick off the mattress I put it into the tin and then I had to go way down ... off the track to empty it out somewhere ... and of course I had to be so careful ... of my leg, of where I put my feet and of climbing up the stairs and onto the porch. I was terrified each time because it was so slippery and while I was doing it of course there was torrential rain, thunder and blue lightening and all the rest of it... it was quite a performance climbing up onto the top bunk to clean it because my leg hurt and on ... occasion, I was wincing, it really was very sore.*

Phoebe's leg injury was also a problem on the return trip:

> *... [the students] were prepared to spot me over the shingle fans... because I was feeling my leg badly at that stage, and I knew it was going to be a trip for me to get back ...(laughing) ... and it ... rained all the way back and I was terrified I would slip on the mud and the slush but anyway I had boys in front of me and behind me and [they] kept turning around to check that I was alright... it was hurting a lot and as I walked along I had to be very careful ... when I stepped over a log, or ... a root ... because ... I couldn't take the risk to ... slip, ... we stopped every 20 minutes or so, and the boys took my pack and it gave me a little bit of respite ... it was very cold and it was very wet and the conditions underfoot weren't particularly marvelous either, so it was a long... painful trip ...it was an epic, but I made it.*

Phoebe saw the incident as the boy who was sick, but after listening to her story, I felt it was the whole trip, with significant factors being Phoebe's leg injury which lengthened the trip considerably, her inexperience as a leader and the bad weather, a combination which could have led to a number of scenarios. I'm not sure if Phoebe realised the gravity of the situation. I looked up the Lodge debrief notes taken at the time of this incident, and there was no mention of Phoebe's pre-existing injury at all. The only recommendation made as a result of this incident was to have disinfectant available at the hut for cleaning up vomit in future. So the debriefing system had failed to capture the full extent of this event, due to Phoebe not having the experience to realise her injury and inexperience were complicating factors in the incident.

5.2.4 Tired

Finally, Jane-Lee said she felt dog tired during and after her incident. Her group had to abandon camp in the night and return to the Lodge due to a stomach bug going through approximately 50 students, some on out camp and others at the Lodge. She was the only

well staff member that night, so spent it looking after sick people. Others (Phoebe, Tommy and Miriam) also indicated tiredness after their incidents, due to physical exhaustion and the aftermath of adrenaline I suspect.

5.3 Effects on respondents' feelings and emotions

Interviewees disclosed 29 different feelings and emotions resulting from their involvement in HIPO incidents. Feelings were negative, positive and neutral, ranging from mild to severe or extreme. Interviewees could experience a diverse range of feelings or emotions through the duration of an incident, depending on its nature, their role in resolving it, their outdoor experience and crisis management abilities. This array of feelings is structured to show the range from mild to moderate to more extreme indicating degrees of negativity or positivity. These are displayed in Table 5.1 below.

5.3.1 Range of feelings

Typically, interviewees reported feeling concern during an incident and relief after it was resolved. This complies with Raffan's (1984) profile of a crisis (discussed in section 5.2.1). Hale (1989) also noted that an important indice of a close call was that those involved expressed relief afterwards. I will use two case studies to illustrate the range of feelings respondents felt during an incident. Feelings are highlighted to relate them more easily to Table 5. 1. Bruce said:

> *I remember coming down the hill thinking 'this is it, we're nearly at the bush,* ***home and hosed.*** *Once we're down there, we're in amongst the trees and even though the weather packs out,* ***we're safe.*** *' And then ... stopping, looking around, seeing somebody had fallen over, seeing the person check, and I thought ... somebody's just twisted an ankle, they'll pop back up any minute, and then when Gerry ... flagged me back up the hill, I had* ***a sinking feeling in my stomach*** *... that person's experienced, they know about first aid, they wouldn't have called me back up here unless there's something that's going to stop us here ... Thinking ... what is the damage, is the leg broken or what? ... and when I ... did a physical examination myself and saw how sore it was, I was* ***concerned.*** *But, once I was through that initial ... feeling ... I just* ***focused on dealing with it*** *and ... things were* ***fine*** *then. A couple of times ... when it looked like the weather... was sort of hovering between getting better or getting worse, I had ... some feeling of* ***concern,*** *but ... once ... the cloud was lifting and the helicopter had come ... back in, I felt ... pretty* ***relaxed*** *... we were able to keep the situation in control.*

Table 5.1 Respondents' feelings and emotions[9]

Negative feelings / emotions	**Positive feelings / emotions**
Mild	***Mild***
concerned	did not panic / go to pieces
divided	railway track (see section 5.3.3)
felt on own	wasn't surprised
not wanting to inconvenience	wasn't concerned, just did it
mild pondering	wasn't too worried
surprised	
Moderate	***Moderate***
not happy	home and hosed
uncertain of ability if RT injured	felt very responsible / people relying on me
worried	
powerlessness	pretty relaxed
pissed off / annoyed	really happy discovered her hypothermia
oops, how did it occur?	felt good, good for self esteem
embarrassed professionally	
Severe	***Extremely positive***
what if?	relief, whew!
felt terrible	felt great afterwards
nightmare image	close to group
cannot trust staff you're with	respect / admiration for students / staff
anger / violence	proud of self / students
	trust and confidence in staff you're with
Neutral effect	
sixth sense	
profound affect	

[9] All descriptors are respondents' own words.

Tommy also experienced a range of feelings and emotions during his incident, some of which touched extremes, as illustrated by his and Miriam's recollections:

> **T.** *Mrs Vodane [landowner] came up ... to report that ... a helicopter was on its way, and then ... I had the incident with the student ... I [told] all the kids ... look, the helicopter's coming ... we've got to move away from here because it may want to land, we're going to go down to the bus ... there's all sorts of gear, pick up gear, something, anything, and ... he was just by me and he bent down and picked up some grass, and I* ***whacked*** *him right around the back of the head, and I turned around and I* ***poked him in the chest*** *and I, I really* ***swore*** *at him, I said, I've had an f'ing awful day and I don't remember the rest,*
> **M.** *... and you're pissing me off ...*
> **T.** *... and it just flowed out of me. I said I've just had 3 hours ... and it was just this* ***violent burst of energy*** *and right at the end of it or something ... I said 'I'm* ***sorry*** *I hit you' and walked away and sat down. And I remember Miriam saying we know exactly what you mean, Mr ....*
> **M.** *It was completely in context because the kid ... knew instantly that he had behaved completely inappropriately for the circumstances ... he was the last one ... that needed reinforcing that ... this had been a very serious day. And I think that's how it sort of came out.*

And once the helicopter had left:

> **T.** *I remember the huge* ***hug*** *we had ... that sort of sense of* ***relief*** *that ... well that you in particular and me with a bit of help, had ... won the day as it were ... also... I felt quite* ***proud*** *of what I'd done ... I felt* ***privileged*** *... being able to watch you work, because I* ***learned*** *quite a lot about the way in which you did some things ... your calmness ... having been a first aider for years in the St. Johns, it's a thing I'd automatically do and yet I was really* ***impressed*** *with the way in which you did that ... also the* ***stress*** *... **adrenaline**'s an incredible thing ... I know that night in here I [was] basically in ... a bit of a* ***daze***, *and ... I ... thought ... '****what if*** *it hadn't worked out happily?' And what effect that would've had on me.*

5.3.2 Neutral effects

Two respondents reported effects which did not really fit into the broad categories of negative and positive feelings / emotions. Garth felt a sixth sense before an incident and Tommy felt a profound effect afterwards. Before Garth even realised there was an incident, his intuition was aroused:

> *... after I'd been in the [snow] cave for about fifteen minutes ... the old sixth sense alarm went off ... [so] I made the decision to come out of the tunnel and check the group ... [that's] when I saw that girl was shivering, ...*

Tommy summed up the effect his HIPO had on him:

> *... So ... it had quite a profound affect, and I can ... still vividly remember... other incidents that I've had with school trips*

These feelings may be related. Perhaps the profound affect after a HIPO triggers that sixth sense in the future, sharpening your judgement to pre-empt a disaster. Garth had noted several indicators that hypothermia was a possibility that day, added to long experience in the alpine environment, it is not surprising he decided to check the group. Such information may be stored in the sub-conscious mind enhancing judgement and decision-making skills, and may be more prevalent with experienced instructors. Perhaps because they've had more incidents (?). This speculation would require further research. HIPO incidents may be an important training ground for judgement skills to develop. This theme is developed further in Chapter Seven.

5.3.3 Railway track

Garth had a unique perspective on how he felt when dealing with an incident. While others described various emotions and feelings, Garth would not be drawn on any. Instead he said:

> *... when in a situation like that, I'm almost like on a railway track, but it's a very wide railway track, and you're like a railway train with a scanner ... controlling this ... wide sweep of events ... or trying to, and you're trying to ... keep the whole thing focused towards a reasonable sort of a goal ... assessing and looking and it's like standing there and having this really wide angle lens ... and walking forward with it.*

I think this indicates that the incident did not evoke emotions for Garth. Due to his experience and training, he looked at resolving the incident in a more mechanical way than most, immediately going into action mode. This is consistent with Raffan's (1984) profile of a managed crisis (see section 5.2.1). Others also went into action mode to resolve incidents:

> *...get on and get things done* (Fred)
>
> *...hard nosed ... just do it* (Agatha)
>
> *...I just focused on dealing with it ... things were fine then* (Bruce)
>
> *... when you're on the line ... you gotta react, you gotta do something* (Frank)

5.3.4 Professional embarrassment

Jane-Lee was the only interviewee who mentioned feeling embarrassed professionally about her HIPO incident. This was understandable given what happened. Briefly, she was teacher in

charge of a camp which was struck by a vomiting and diarrhoea bug. Some students (14 year olds) were already sick by the day they left for out camp, so she and a colleague took their group to a campsite which was close to the Lodge and had vehicle access for the car they took for back up. Late in the evening, her colleague and two students came down with the bug. She sent them, along with two well students, back to the Lodge in the car. An hour later, the two well students arrived back in the car. They told Jane-Lee that only one parent was still standing back at the Lodge as all staff and many more students were sick. She spent the next two hours ferrying students back to camp in the car, whilst the remaining students walked along the 4WD road in the dark until they could be picked up.

> *Well professionally I was a bit embarrassed about the whole thing, because of those three... bits to it ... one parent in charge of the camp up at the Lodge, students driving a car, and me having to leave students walking on their own in the middle of the night ... [I was] a bit embarrassed about kids driving cars (laughing) in particular, that one I felt a bit sheepish about.*

I expected other respondents to experience some embarrassment if involved in an incident, however, none mentioned it. Looking at the circumstances of Jane-Lee's incident, they were unique in the sense *that 'if there had been a car crash with the kids driving, our names are all mud'* (Jane-Lee). But Jane-Lee had not created this situation. She explained:

> *... one of the well students I had sent back was a farm boy and was used to driving, and somehow between him and the parent that was still able bodied decided that he should drive the resident teacher's car back to tell me ...*

This particular event, is a classic example of a wild card factor (Haddock, 1996a).

> *Wild card factors can strike anyone at any time, regardless of how much planning ... goes on. Wild cards are a subset of Raffan's [1984] lemons and their main features are their unpredictable and serendipitous nature ... [They usually inhere] in the teachers or students* (p. 6).

Taking attribution theory (Baron and Byrne, 1994) into account, perhaps it is easier to admit embarrassment if a wild card factor is responsible (exonerating you). Or, perhaps Charlie was right about the culture changing so that people talk more comfortably about incidents these days, therefore feeling less embarrassment. The setting may also have influenced people's comfort levels about sharing incidents, as Rotoiti Lodge had established procedures for discussing incidents for some years and people were used to it. Bruce said:

I think familiarity with the whole debriefing process is a big difference, because I've noticed a change in even my feelings about it, talking about incidents where I feel that there could be some implication or blame attached to me ... I feel it much less now, when I'm in a debriefing situation, I just accept that process now as being normal, and that's just something that's taken time of being involved with the process and seeing the value of it.

5.4 Trust and confidence in colleagues

Interviewees made strong remarks about the importance of trust and confidence issues among colleagues working together in the outdoors, especially when resolving a HIPO incident. When re-telling their stories, some expressed confidence and trust in their colleagues, while others said this crucial component was lacking. Some had confidence and trust in some colleagues yet not in others during their incidents. Confidence and trust was asymmetrical between distinct groups of colleagues. This was also alluded to by Austin (1992). I will use examples to illustrate these contrasting situations.

Confidence in the team was important for Fred as teacher in charge of his camp:

[the incident] reinforced... the knowledge of the supportive people I had ...And it's very reassuring to know that you've got other people who you can rely on to do the things when they need to be done ... I mean that's the way we work, we've got to work that way there, we're like a sort of six or eight legged monster, and we just work all together ... to me it's a very efficient and very effective way of dealing with things.

Whereas trust in colleagues could not be taken for granted for Agatha:

[teachers], they're good people, but [the incident] just makes me realise, that you can't trust them. And Barry's wasn't because I couldn't trust him, it was just because in some ways he didn't know any better? But with some ... other staff... I said to one of them about her cotton skivvy, and I'm bloody sure she wore it up the Lake, and I know she was up the mountain in it today, and it's ... like we're telling the kids one thing and they're doing the opposite ... but it's like they're a law unto themselves and ... hypothermia won't get them, it will only get the kids. So, it's [a] real ... double standard and it's quite infuriating and it makes me really aware when I get the staff to get the kids packed to go up on the mountain, that I need to check them [too]. And in fact, this week, I checked the kids before we left ... for their hat, their raincoat, their gloves, and I actually physically checked under their clothing, each van load that I took up the hill because I knew that I didn't want to get up there and find that they had screeds of cotton on ... it's easy to let that slip eh. Like, the week before... I let it slip and I got up there and fucken every kid had a t-shirt with them ... and I just sort of realised that ... I can't afford to let it slip.

On his snow craft trip, Garth found colleagues that he could trust and rely on and those he could not, due to their lack of knowledge and experience. There were two other specialist outdoor educators (Jack and Meg) working with him on his trip, plus a teacher (Angus) and student teacher assistant (Rebecca). Of his fellow instructors he said:

> *...one of the most positive things about that whole trip ... [was] we worked so well together and we were thinking of the other people's groups. For that reason, I'd say it's the only trip I've ever been on with other leaders where I've felt completely confident um, ... I felt very confident, comfortable with Meg's and Jack's experience and it seemed to go the other way as well. And it made the whole thing very easy.*

Of the other two he said:

> *...[Angus and Rebecca] weren't really aware of what was happening [the student getting cold]. That is one event that did disturb me ... But they were useful in terms of some practical things if they were given really clear guidance as to what to do, but they weren't really capable of making a judgement call. When we [the instructors] were underground, it was left up to them to do that roving eye, and they basically didn't have that experience and shouldn't have been expected to do it.*
>
> *... with the teachers, it's this whole thing of when are they a liability? ... I remember being concerned right from the start, at the numbers ... that may sound conceited but I don't ever count teachers [re ratios] in an alpine environment. Um, I mean, the first thing I do is, I ... start assessing them to find out if they're going to be any help at all, or whether they're going to be ... like an increase in numbers.*

The adventure experience paradigm originally proposed by Martin and Priest (1986) is useful in the analysis here. It (Figure 5.2) illustrates the group's experience. Let us consider Garth's snow craft course as a level two in a possible difficulty range of one (low) to five (high). The 23 students on the trip had some tramping experience, but were novices in a snow environment, so were operating at a level of one to two say. The teacher was experienced at managing groups of students but at a similar level to the students regarding snow skills so was operating at level two; the assistant was similar to the students in most respects apart from being a little older with some teacher training, and was also operating at level one to two; the three instructors were competent alpine instructors operating at a level of three to four.

Figure 5.2 shows why Garth, understandably, did not count the teacher or the assistant in terms of lowering ratios on this trip. Although helpful for some tasks, given clear guidance

from the instructors, they were additional 'students' for the instructors to look after. So the real ratio of (experienced) staff to novices (staff and students) on this trip was 1:8 (approximately), not 1:5 as would be the case if Angus and Rebecca were counted as experienced.

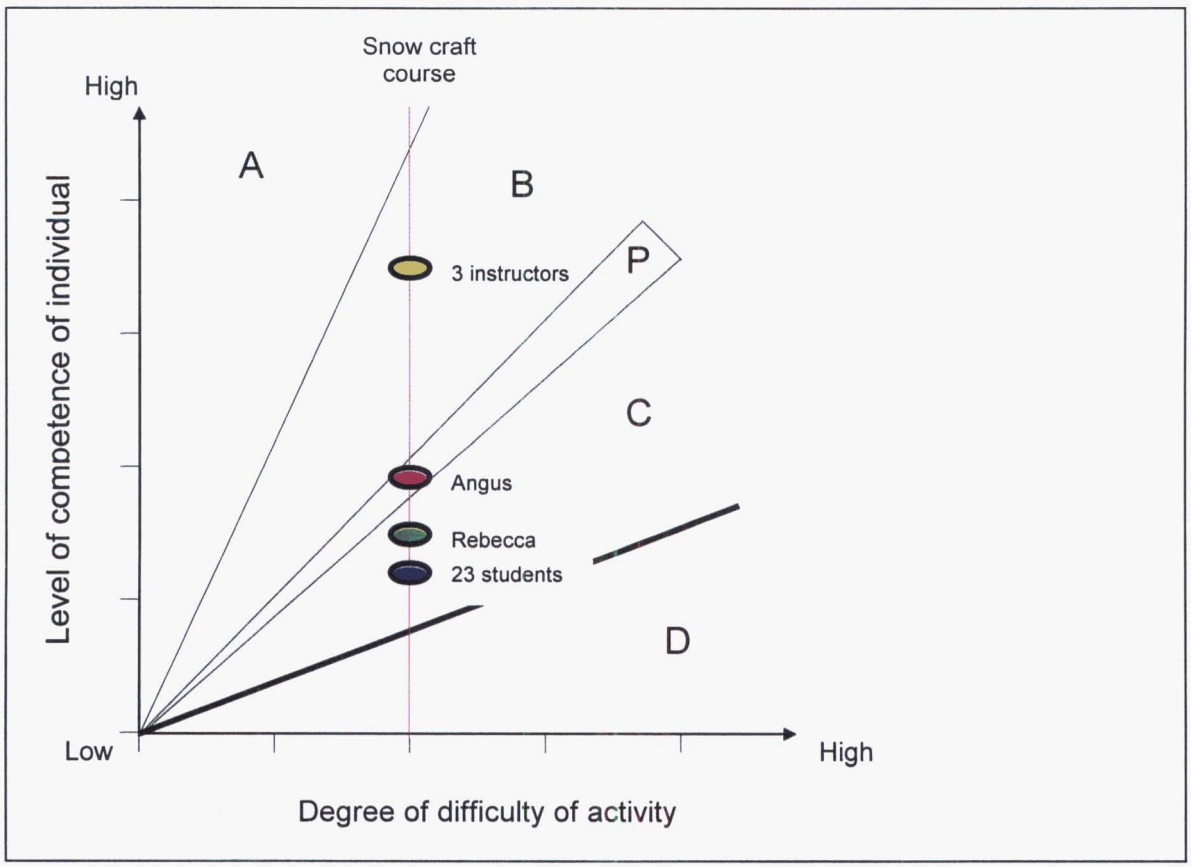


Figure 5.2 Operation zones model for snow craft course (adapted from Martin and Priest, 1986).

Miriam and Ripena had limited confidence in senior students and parent helpers on camp, due to gaining limited support from them on camps in the past. Miriam said:

> *... like going up on the Mount Robert Ridge, in pretty cold conditions and the kids were just dying to do a bit of snow stuff ... there was ... a constant pressure to get up to it ... and my seventh former .... was ... unforgivable because he was the worst for that sort of pressure ... kids really wanting to have fun, and you hate being a hard task master all the time, and that's where ... all the intermediate sort of people that help become a [problem. It's] very much easier ... if you're with other staff members that have the same [attitude] ... and being able to work in that sort of structure.*

5.4.1 Asymmetrical trust and respect

In summary, the respect for, trust and confidence held by colleagues for one another was a crucial element in safety to respondents. However, respect and trust was not always mutual or symmetrical. Experienced outdoor educators trusted one another but not their less experienced teacher colleagues in situations involving commitment and risk. Less experienced staff trusted their more experienced colleagues and each other but not always their senior student or parent assistants. Experienced outdoor educators and instructors, although respecting their less experienced colleagues, did not always trust their judgement when it came to decision-making critical to safety.

So on a scale of experience, like trusted like, less experienced trusted more experienced but the reverse of this was not always true. Reasons given for this were a lack of knowledge, skill and experience in that environment and activity on the part of the teacher or assistant (Garth, Agatha, Miriam, Ripena), or because some teachers and assistants chose to be a law unto themselves (Agatha, Miriam, Ripena).

A problem existed at the Lodge, where at times, a shortage of experienced outdoor educators or instructors meant that less experienced teachers or assistants were sometimes relied on to carry out duties beyond their competence. They did not have the skill or judgement capability for some tasks. Additionally, the environment itself was also challenging for them, so simple tasks critical to safety were sometimes not carried out due to the person operating out of their comfort zone. When operating in C or D zones (see Fig 5.2 or 4.3) there is no margin for safety to cope if difficulties arise as the person is understandably focusing on themselves. This problematic situation was a contributing factor to several of the HIPO incidents in this study, and is discussed in more depth in Chapter Eight.

5.5 Effects on leadership

I asked interviewees what effect the incident had on their outdoor leadership since the event. All identified general and specific things they had become more aware of or had reaffirmed as a result of their HIPO incident. General effects included sharpened

judgement as a result of awareness gained (most); learned a great deal (Jane-Lee, Garth, Phoebe, Bill); increased confidence and trust in themselves (Phoebe, Jane-Lee); and safety practices were reinforced (Tommy, Bruce, Fred, Bill, Garth).

While general effects overlapped, specific effects on leadership were more unique. Each incident in the study highlighted different aspects of leadership for respondents. For example:

> *I'm much less tolerant of kids challenging the basics as I know what the consequences are* (Miriam).
> *It made me realise that it's not uncommon that the teachers are the weakest link* (Agatha).

It would take much time and experience for a leader to gain all the insights disclosed in the research. But sharing others' incidents gave outdoor leaders opportunities to learn from others and a much better idea of the frequency of events as alluded to in earlier sections and summed up by Jane and Charlie.

> *... that's the nicest way to use it, when you hear somebody else's [incidents] (all laugh)... You can ... take that learning on. But you didn't have to do it yourself* (Jane).

> *... within our own individual experience, we may ever only have one of a particular type of incident ever occurring ... but we don't get the bigger picture. And that's where a ... broader research [is necessary] ... to show that bigger picture* (Charlie).

Alan Hale (1989) echoed this in his article 'Close Calls - Ignore them at your peril.' As already discussed, he encouraged outdoor leaders to discuss, record and analyse their close calls as well as their accidents, so more people could learn from them and appropriate changes could be made regarding programme safety.

Many insights gained appeared in the literature. Gintime said *'it made me realise it could happen to anyone, including me'*. Two studies revealed that in spite of an accident or near miss in a similar area in the past, group leaders failed to perceive that the hazards could affect them or their group (Helms, 1984). So realising 'it can happen to me' was a valuable lesson learned by Gintime after her incident.

5.6 Effects on involvement in outdoor education

Six respondents said their HIPO incident had little effect on their involvement in outdoor education. Bruce's reply was typical, *'probably have very little affect I imagine, I'm committed to that.'* Four respondents reiterated the HIPO had been a learning experience and they'd *'carry on and learn more'* (Bill). Two raised the issue of staff trustworthiness on camp. Miriam said:

> *I'm very careful about who I'll come away on camp with ... [it] becomes a concern ... with ... squeezes on resources ... the whole ... issue of getting staff to come up here that are safe* (Miriam).

5.7 Effects of event on others

I asked respondents what affects, to their knowledge, the events had on others involved. They identified affects on the students, victim, parent help, colleague/s (on camp), and people back at school (students, staff).

Respondents reported 24 different effects on students, mostly feelings and emotions they observed in their groups. In order to structure this array of feelings and for consistency, I used the framework used for interviewees' own feelings in Table 5.1.

5.7.1 Range of feelings

Like respondents, students exhibited a range of feelings, emotions and actions over the duration of a HIPO incident. I will use two examples to illustrate this, highlighting feelings and emotions to relate them more easily to Table 5.1. Tommy described students' reactions when one student had an asthma attack and prolonged breathing problems in the caves.

> *... it was reasonably* ***tense*** *in there but* ***calmish*** *I suppose, and then when the kids started to* ***see just how much trouble*** *Rosie was having ... I think some of them started to get a bit* ***anxious*** *... and it was round about that time we told the students who had already gone through the 'Birth Canal' [a tight squeeze] to stay put ... and then we had that* ***marvellous moment*** *when the kids on the other side started* ***singing*** *'it's a lovely day today' and we all burst out* ***laughing.***

Some effects on the students were extreme. Phoebe said:

Table 5.2 Students' feelings and emotions[10]

Negative feelings / emotions	**Positive feelings / emotions**
Mild	***Mild***
concerned (for injured student)	not concerned (about situation)
thought seriously about lead up	accepted staff needed space
	realised reality of deaf people can't hear
	interested in helicopter
Moderate	***Moderate***
felt guilty	adventure
very concerned (for injured student)	hilarity
sick & tired of waiting	positive
most concerned about selves	learnt something
	calm
Severe	***Extremely positive***
tense	maturity
anxious	pride
angry	tried hard / helpful
	really supportive
	trouble-makers prepared to work in
	marvellous moment - singing
	tension release
OTHER	**OTHER**
did not see seriousness	took incident seriously
did not realise what was happening	realised seriousness
staff did not let them see seriousness	staff shared seriousness with them

[10] As expressed by respondents

> *... it made a* ***profound*** *effect on the actual group because the trouble makers were* ***prepared to work in*** *with me, and do as they were asked, they were prepared to spot me over the shingle ... because I was feeling my leg badly at that stage, ... I think it made [the boy who was sick from eating all the sweets] ...* ***think very seriously*** *about the circumstances leading up to it, of course ... his fellow classmates were very* ***angry*** *with him, and I know that he felt extremely* ***guilty.*** *For the rest of the week, he couldn't be* ***nicer*** *... I' m sure he* ***learnt*** *something from it*

Interestingly, respondents reported contrasting levels of awareness among students, regarding the seriousness of the HIPO incident. Some staff did not disclose the seriousness of the situation to students, or else made efforts to conceal it. Consequently, some students did not realise the seriousness of the situation while others did, according to respondents.

> *... we didn't let them see, I guess that I thought Thursday night was pretty dodgy ... it all got solved and four came back and out-camp had a good old adventure, clomping around in the puddles in the middle of the night, they thought it was hilarious... For them it was positive* (Jane-Lee).

This was consistent with earlier findings (Haddock, 1995/6a) where students thought the incident was an adventure, while staff realised it was a near miss. Tommy tried to hide the seriousness of the situation from students, but they realised anyway. He said:

> *... a couple of the kids were ... saying 'is she gonna be alright?' ... and I said 'oh yes yes, Meg's here [the instructor] and everything will be fine, no problem' ... but I didn't feel that, I felt really tense ... the kids were really good ... people realised it was a serious incident ... and there was a lot of concern for the student involved*

Others made no effort to try to hide the seriousness of the situation from students. In Agatha's group, some students realised the gravity of the situation, while others did not. Her teacher assistant suffered mild hypothermia on his second caving trip for the day.

> ***A.*** *... you could feel this ... team sort of thing coming in and ... there were a number [of students] that I could've relied on and they ... started stepping up and being a little bit more older, because he was up with me ... [instead of tail ending] ... suddenly he was in trouble, not that he made a big deal about it, but he ... wasn't scared to say that he was cold and ... there was ... this feeling of support ...I think a lot of it was because he was up front and wasn't trying to hide stuff ... they could see that and it made them that bit more mature.*
>
> ***I.*** *Do you think the students were aware of the gravity of the situation?*
>
> ***A.*** *I think a couple of them might have been. Some of them wouldn't have been and the middle ones would have been aware that he was pretty cold.*

Students' sensitivity to the seriousness of the situation appears interesting, but requires further investigation to check out the accuracy of teachers' perceptions.

5.7.2 Victims

Nine of the twelve interviewees identified effects of the incident on victim/s. Physical, social and psychological effects were identified. Physical effects included: cold (four incidents); pain (three); breathing difficulties (two); sick / vomiting (two). It is interesting that the physical effects of the 11 incidents concentrated into just four areas. Cold was a significant causal factor in a previous study of accidents and incidents at the Lodge (Haddock, 1993b). Further investigation would need to determine the significance of the other physical effects. Respondents reported social and psychological effects of incidents on victims also. These included: extreme guilt (student); couldn't be nicer after (student); thought seriously about lead up (student); suppressed pain to organise own evacuation (teacher); open about being cold (teacher); enjoyed camp anyway (sick students). These responses reflect social norms and personality traits in my view, but further investigation would need to verify this.

5.7.3 Colleagues

HIPO incidents had the effect of getting colleagues to work together professionally to resolve them. They generally assisted and supported one another whilst remaining calm and in control. Garth commented that less experienced staff required clear guidance on how to assist, while fellow instructors did not. Others commented that the incidents were usually talked about casually afterwards in the kitchen. Eyebrows were sometimes raised, but staff were not put off camps as a result of incidents. This latter point was made a number of times during interviews and focus groups.

5.7.4 Assistants

A parent helper at Jane-Lee's camp who found himself in charge when all staff fell ill, experienced contrasting feelings during the incident. These related directly to the amount of responsibility and hence stress he felt at different stages. Jane-Lee said he wasn't happy with being in charge initially as he lacked the skills to be responsible. Later when Jane-Lee returned, he was thrilled, relieved and helped out willingly. This highlighted the importance of adequately staffing school camps, and not relying too heavily on untrained voluntary assistants. This school reviewed its staffing policy after the incident, increasing the number of teachers attending camps from three to four, in line with all other constituent schools.

5.7.5 People back at school

Three respondents mentioned effects the incidents had on people back at school. Miriam and Tommy stressed how important it was that they received back up and support from school, for any decisions they made at camp. The support they received included senior staff back at school dealing with parents, rescue services and media during and after the event and the principal commending their efforts at a staff meeting on their return to school. Of paramount importance was that they felt their judgement was trusted. Jane-Lee reported that the incident of 50 students and staff getting sick at camp was viewed with humour by others on their return to school. It gave them *'a big laugh'* she said.

5.8 Learned from the experience

I asked interviewees what they learned from the experience of their HIPO incident in order to further investigate the meaning/s of the event to them. They reported approximately thirty different things that they learned or had reinforced as a result of the HIPO incident, which are displayed in Table 5.3 below.

As indicated, learning specific to each incident did not overlap, but fell into four categories: learning about themselves, the students, their colleagues and other areas. Some items spanned two categories. Many specific learning points were reiterations of points made earlier in this analysis.

Poignant for many respondents was what they learned about themselves. Their comments reflected a deeper understanding of the role and responsibilities of an outdoor leader. The 'self learning' and 'other learning' lists bore particular resemblance to Priest's (1987) list of skills and attributes of effective outdoor leaders (see Table 3.1). There was no doubt that HIPO incidents were valuable learning experiences for respondents, and I would go further to state that they are a valuable training ground in the development of an effective outdoor leader. This theme is developed further in Chapter Seven.

Table 5.3 What respondents learned from incidents

Self Learning	Learning About Other Leaders

• about my limits
• not to let guard down until end of camp
• not to transfer responsibility to students, they are not equals
• I could push myself
• I had to give confidence to kids, therefore I had to instil confidence in myself
• have to communicate better with other instructors, to cover group
• reinforced importance of being prepared
• have to look after myself, manage my stress
• know when to step back, let others manage
• never put myself at risk (if leader)
	• respect
	• group work
	• drew closer to them
	• to communicate better with other instructors re - group coverage
	• adult helpers cannot necessarily cover quite simple events independently
	  • you cannot take anything for granted
	  • eg. gear check systems
	• the quality of the people you're with
	• check in with colleague's preparedness (physical, psychological)

Learning About The Students	**Other Learning**
• student/s limits • even when sick, they can still have fun • they are not equals, so cannot always transfer responsibility to them • respect • drew closer to them • they were responsible to one another • the value of their prior fitness and good gear • check their gear before activity (eg. inhaler)	• respect for how quickly lemons (causal factors) can stack up • about hygiene • planning, what and how • need for communication (radio) • be aware of what deaf people cannot hear outdoors • value of prior fitness & good gear • to carry emergency rations (high energy snacks) • think of worst case scenario • need for adequate medical information

5.9 Chapter summary

HIPO incidents inevitably had an effect on those involved, ranging from physical effects to effects on their feelings and emotions. Interviewees reported a range of effects during and after events. Stress levels experienced during an event matched Raffan's (1984) profile of a typical crisis, with a high initial stress level then a tapering off of stress as the incident was resolved.

Respondents reported effects on their respect for, trust and confidence in colleagues, their leadership and involvement in outdoor education. Interestingly, trust and confidence in colleagues, remarked on by many respondents, was not mutual or symmetrical. Experienced outdoor educators and instructors trusted and had confidence in one another but not their less experienced teacher colleagues. Teachers trusted and had confidence in each other and their more experienced colleagues, but not in parent or student assistants. So like trusted like and less experienced trusted more experienced but the reverse of this was not true. This led instructors like Garth, to count teacher assistants as extra novices, rather than extra staff when it came to calculating ratios for activities.

Interviewees reported various effects on others involved in an event. These included victims, students, colleagues on camp, assistants and people back at school. Students involved in the event, like interviewees, experienced a range of feelings and emotions during and after an event. Additionally, students did not always realise the gravity of the situation. Some were more likely to think it was an adventure than a HIPO incident according to respondents. Further research is required to verify this however.

Examining effects further assisted in unravelling meanings of HIPO incidents for those involved. Incidents had little effect on respondents' involvement in outdoor education as most were committed to this. But their involvement in a HIPO incident was undoubtedly a learning experience, which often sharpened interviewees' judgement, improving their leadership after an event. This is an important point, since HIPOs may help teach the very lessons that prevent future accidents. Thus respondents reported positive and negative effects of events, indicating that like risk, the outcomes of incidents (and accidents) are not *only* losses. This theme is examined further in Chapter Seven.

It was apparent through effects incidents had on respondents and others involved, that these events were significant to them. Several tools have been developed by researchers to assist in determining the significance of an event for preventive purposes. Chapter Six describes how one such tool was used in this study to determine the significance of HIPO incidents to respondents.

CHAPTER SIX Determining the significance of an event

6.1 Introduction

In this thesis I have reviewed the literature relating to incidents, their significance, investigation and analysis. Part of research objective b was to determine the significance of HIPO incidents for the respondents involved. This chapter presents findings related to this objective.

The literature revealed that several tools were used to determine the significance of industrial accidents and incidents. One such tool was Albrighton's (1993) Risk Assessment Model (see Figure 1.2). He recommended that incidents with a risk factor of three or more should generate further investigation, analysis and corrective action. So incidents with a risk factor of three or more were the focus of this study. My use of Albrighton's tool was twofold. To ascertain the scores for inclusion of events in the study and to determine the significance of events for respondents.

6.2 Interviews

I asked interview respondents to rate their incident using Albrighton's model at the end of each interview. I explained how the model worked, taking care to go over each descriptor, as these had caused some confusion in the pilot study. I explained there were no right or wrong answers and where more than one respondent was interviewed, got them to assess the incident separately so they did not influence each other. During the discussion I explained that it didn't matter if they did not agree.

To control for the limitations of self reporting, an external consultant was engaged to rate all incidents independently. If an incident was rated three or more by the respondent, consultant or both, it was included in the study. Table 6.1 below shows the results of ratings by the respondents (resp) and consultant (cons). Respondent name and incident number identify them.

All incidents were rated three and above by the consultant, whereas two incidents were rated a two by respondents. Spur rated his incident two while the consultant rated it five. Fred rated incident 5b a two while Bill (his co-interviewee) rated it three and the consultant rated it four. So under the criteria of one or both rating an incident a three or more, both incidents were included in the study. One interview was excluded from the study as the incident was rated a one by the respondent. I agreed with the rating so did not send this incident to the consultant.

Table 6.1 Risk assessment scores (interviews)

INCIDENT (by respondent name)	PROBABILITY+		SERIOUSNESS=		RISK FACTOR	
	Resp	Cons	Resp	Cons	Resp	Cons
1 Agatha	1	2	2	2	3	4
2 Tommy & Miriam	T2 M3	2	T2 M2	3	T4 M5	5
3 Renal	2	1	2.5	2	4.5	3
4 Bruce	2	2	2	2	4	4
5a Fred&Bill (Incident 1- Jasper)	F2 B2	1	F2 B2	2	F4 B4	3
5b Fred&Bill (Incident 2- Eddie)	F1 B2	2	F1 B1	2	F2 B3	4
6 Garth	2	2	2	2	4	4
7 Gintime	2	1	2	2	4	3
8 Phoebe	2	1	2	2	4	3
9 Spur	1	2	1	3	2	5
10 Jane-Lee	2	2	1	2	3	4

Figure 6.1 below illustrates the risk assessment scores given by the respondent/s and consultant (events are identified by incident description and number). Respondent/s and consultant scores agreed for three incidents (2,4,6). The two respondents' scores agreed for incident 5a. In cases where scores did not agree, the consultant rated the incident higher for four incidents (1, 5b, 9, 10), while the respondent rated it higher for four incidents (3, 5a, 7, 8). In all cases the difference between scores was one point, except incident 9 where the difference was three points (respondent rating two and consultant rating five). For incident 5b there was a one point difference between each of the three ratings as already discussed. In summary, there was general agreement in the risk assessment scores between consultant and respondent/s as they were within one rating point in all but one of the eleven incidents.

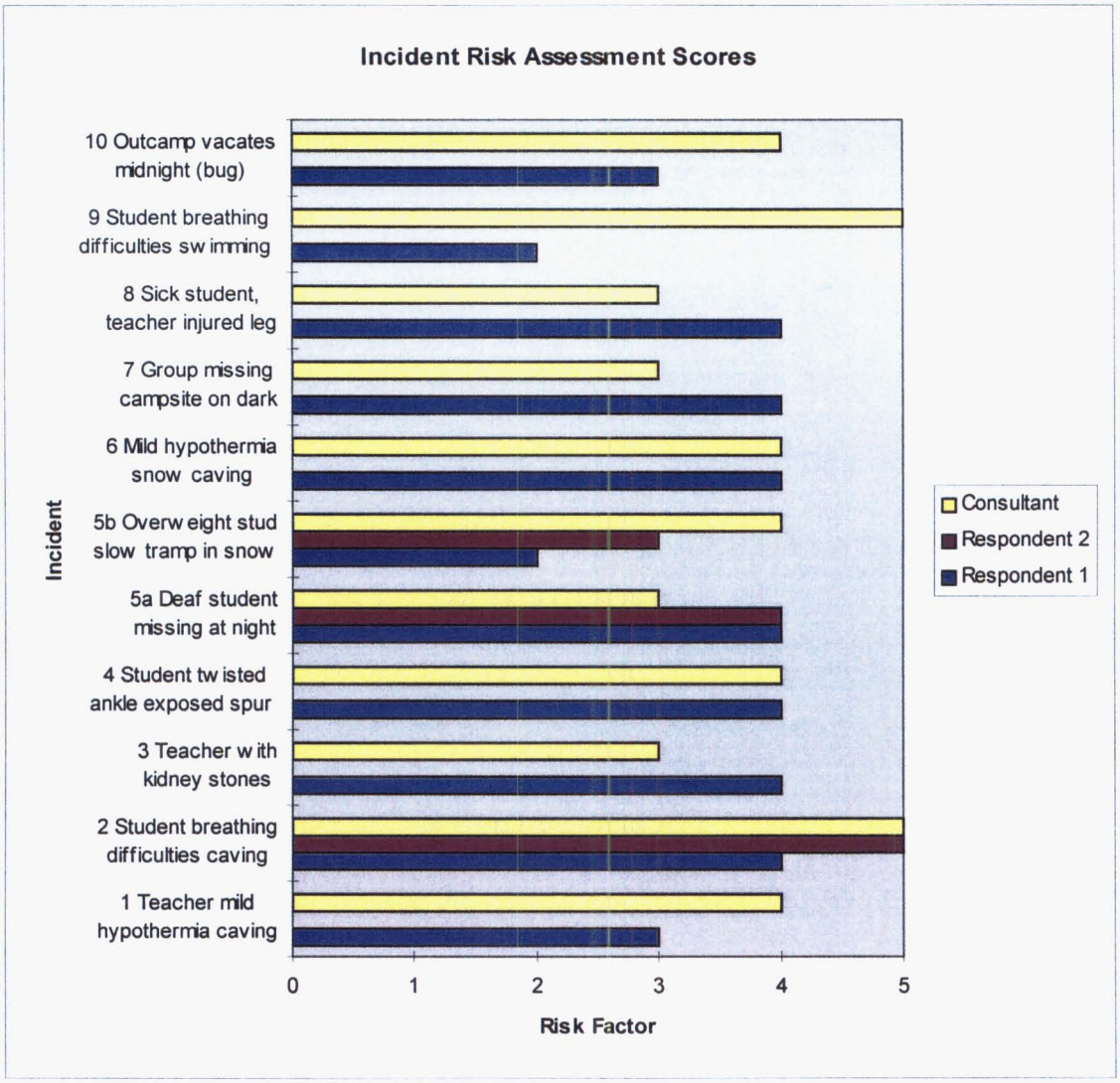


Figure 6.1 Incident Risk Assessment Scores (interviews)

6.3 Focus groups

To ascertain focus group respondents' views on the significance of events, I gave them a case-study to discuss and rate using the Albrighton (1993) risk assessment model. They were all given the same case-study, based on an incident from one of the interviews (5a). Focus group one was involved in this incident the week of their discussion. I read the case-study (see Appendix I), then gave them an opportunity to ask questions. I gave them the Albrighton model (see Appendix II) explained how it worked, and answered any questions. Respondents were asked to rate the incident separately so they did not influence each other. Finally, they were asked to share how they rated the incident and why. They did this in turn, then I told them the outcome of the incident (see Appendix I).

Respondents discussed the incident further in some cases. Scores are displayed in Table 6.2 below.

Table 6.2 Risk assessment scores - Focus group case study

RESPONDENT		PROBABILITY +	SERIOUSNESS =	RISK FACTOR
Focus Group	Name			
1	Greg	2	2	4
	Sue	0	2	2
	Ben	1	1	2
2	George	3	2	5
	Charlie	1	2	3
	Norm	3	2	5
	Baz	1	2	3
	Jackie	3	2	5
	Ralph	2	2	4
3	Lou	2	2-3	4-5
	Frank	1	2	3
	Eric	3	2	5
4	Ripena	2-3	2	4-5
	Jade	3	2	5
	Leila	3	2	5
5	Jane	1	2	3
	Juanita	2	2	4
	Janice	2	2	4
	Ezmerelda	3	2	5
interview	Fred	2	2	4
interview	Bill	2	2	4
"	Consultant	1	2	3

Figure 6.2 below shows a wide range of scores given for the probability of this event occurring. Scores covered the whole range possible, from zero to three. Similar numbers rated the probability as a one (6), two (7), and three (8). Such variation in the scores puts into question its usefulness for determining the probability of an event occurring.

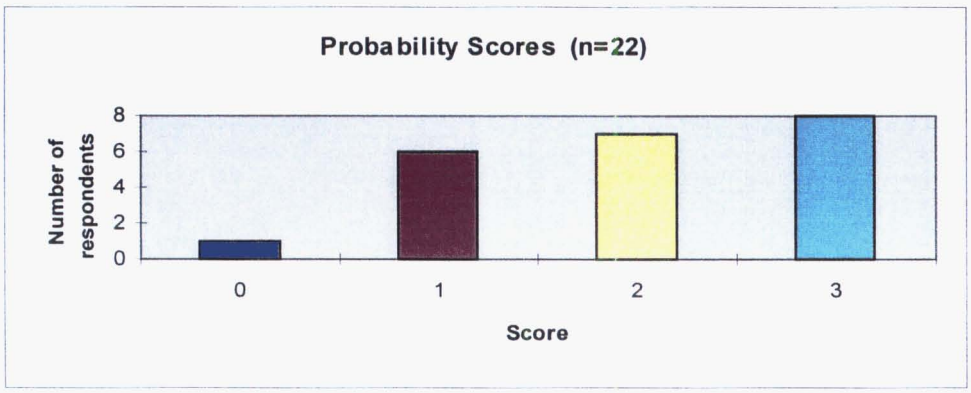


Figure 6.2 Probability scores

An examination of why the variance may have occurred could assist refinement of the tool and interpretation of the results. First, I noticed that respondents found the probability rating the most problematic, indicated by most questions being asked about this variable during the exercise. Confusion arose where respondents tried to assess how *often* this type of event would occur. I emphasised that they needed to base their assessment on how *likely* it was that the event would occur, given the same set of circumstances. Second, further research would need to test whether better descriptors would improve agreement between scores.

Seriousness scores were more consistent as shown in Figure 6.3 below. Twenty respondents (including the consultant) gave the incident a seriousness rating of two (quite serious), one gave a one (marginal) and one gave a three (catastrophic). The consistency of rating clearly indicated agreement that the incident was quite serious.

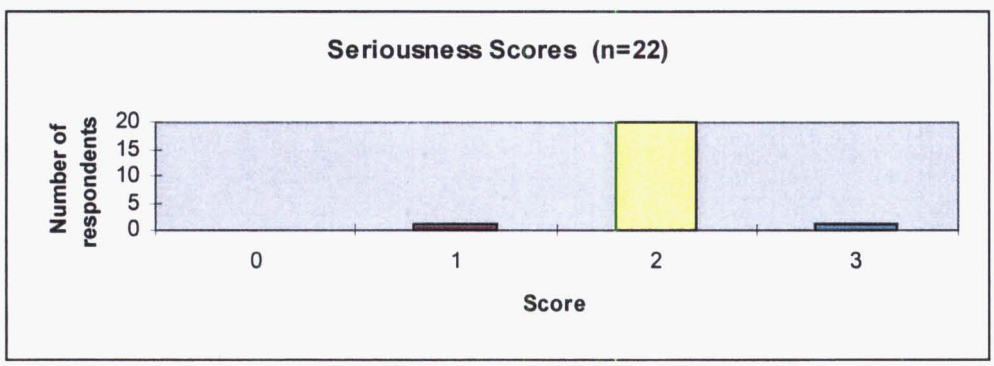


Figure 6.3 Seriousness scores

By adding the probability and seriousness ratings together, a risk factor score was obtained. Figure 6.4 below, shows the risk factor scores of respondents and the consultant.

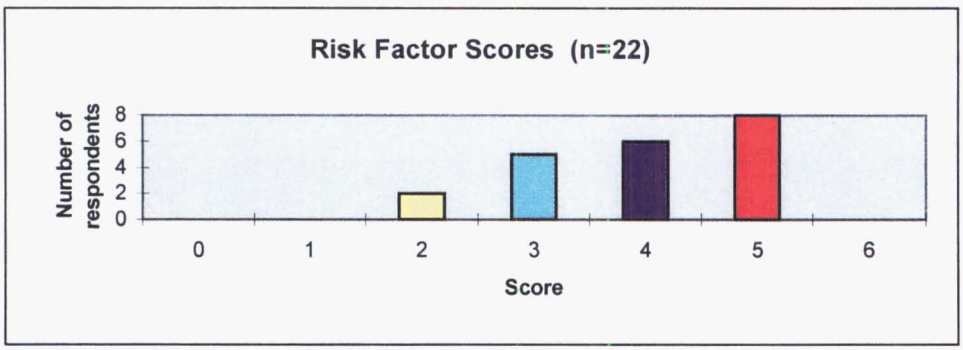


Figure 6.4 Risk factor scores

Risk factor scores ranged from two to five (two = 2; three = 5; four = 6; five = 8). The variance in scores reflected the variance in probability rating scores discussed earlier.

6.4 Chapter summary

Albrighton (1993) recommended that an incident with a risk factor of three or more should generate further investigation, analysis and corrective action. Incidents with a risk factor of three or more were the focus of this study. All interviewees rated their HIPO incidents using the tool as did the consultant. Most interviewees rated their incidents a three or more (12 of 14 ratings). The consultant rated all incidents a three or more. This indicated (and thus reaffirmed previous chapter findings) that the majority of respondents and the consultant thought the incidents were significant.

To test for reliability of the tool, all focus group respondents were given a case study to rate. A comparison of the probability scores showed a range of scores from zero to three, shedding doubt on the trustworthiness of the tool to accurately measure the probability of an event's occurrence. This variable may need some more work on the descriptors or respondent briefing. A comparison of the seriousness scores showed that most (20 of 22) gave a seriousness score of two, indicating the tool was more trustworthy in measuring the seriousness of an event. In combining scores, a clear majority of respondents gave the case study incident an overall risk factor of three or more (20 of 22) as did the consultant. This indicated respondents and consultant alike thought the event had significance. It also

indicated that the instrument was useful in estimating three plus incidents and thus determining the significance of an event.

It is therefore useful in delineating HIPO incidents from other minor events with no relationship to major accidents and thus may be useful for preventive and safety purposes. I therefore recommend that schools consider using such a tool to determine HIPO incidents which require reporting, analysis and remedial action, as part of its overall risk management plan.

CHAPTER SEVEN How incidents were processed

7.1 Introduction

> *Processing is an activity that is used to encourage individuals to reflect, describe, analyze, and* ***communicate*** *what they have recently experienced (Quinsland & Van Ginkel, 1984)... The primary reason for processing is that adventure-based learning experiences are rich in symbols, metaphors, feelings and typical behaviour patterns... Transfer and generalisation occur when the learning in one situation carries over to another* (Nadler and Luckner, 1992, pp 1 & 3).

The processing of experiences occurred on different levels and in different ways according several authors (Nadler and Luckner, 1992; Schoel, Prouty and Radcliffe, 1989). It could assist individuals to find out what happened at a cognitive, affective (feelings and emotions) and behavioural level. Respondents identified similar benefits when reflecting on incidents, including finding out why it happened and what they could have done to avoid it, and coping with the feelings side of it.

Research objective d was to investigate how (or if) HIPO incidents were processed afterwards. Objective e was to elucidate procedures for incident reporting and analysis which would be beneficial to a school's risk management plan. Respondents were asked how, in their experience, incidents were processed both formally and informally. I asked interviewees how they processed a specific HIPO incident and I asked focus groups to tell me, in general, how they usually processed such events. I asked all respondents which methods (formal and informal) they found beneficial.

7.2 Formal ways

Interviewees reported the following formal ways they processed their HIPO incident: a verbal debrief at the end of camp at the Lodge; notes written up at debrief and kept on file at the Lodge and a copy sent to the liaison teacher at school; incident reported to principal or deputy principal by telephone during the week or on return to school; liaison teacher told on return to school; verbal debrief at school; discussed with students at camp or at school; reported to outside agencies (for example: Health Department, health nurse, deaf tutors); incident used as example to educate future groups preparing for camp; separate incident report completed.

Of the eleven incidents reported in the ten interviews, all were debriefed at the Lodge and notes taken except for one. Renal's incident (kidney stone pain and evacuation to doctor) occurred after the debrief, so a separate report was written up the next day. This was a departure from a previous study (Haddock, 1995/6a) where some respondents were excluded from any processing of an event back at school as they were outdoor instructors employed by the school for the specific camp only. Due to their experience, they would most likely have had a valuable input to make to a debrief. Additionally, there was no formal or informal debrief after the event at some schools.

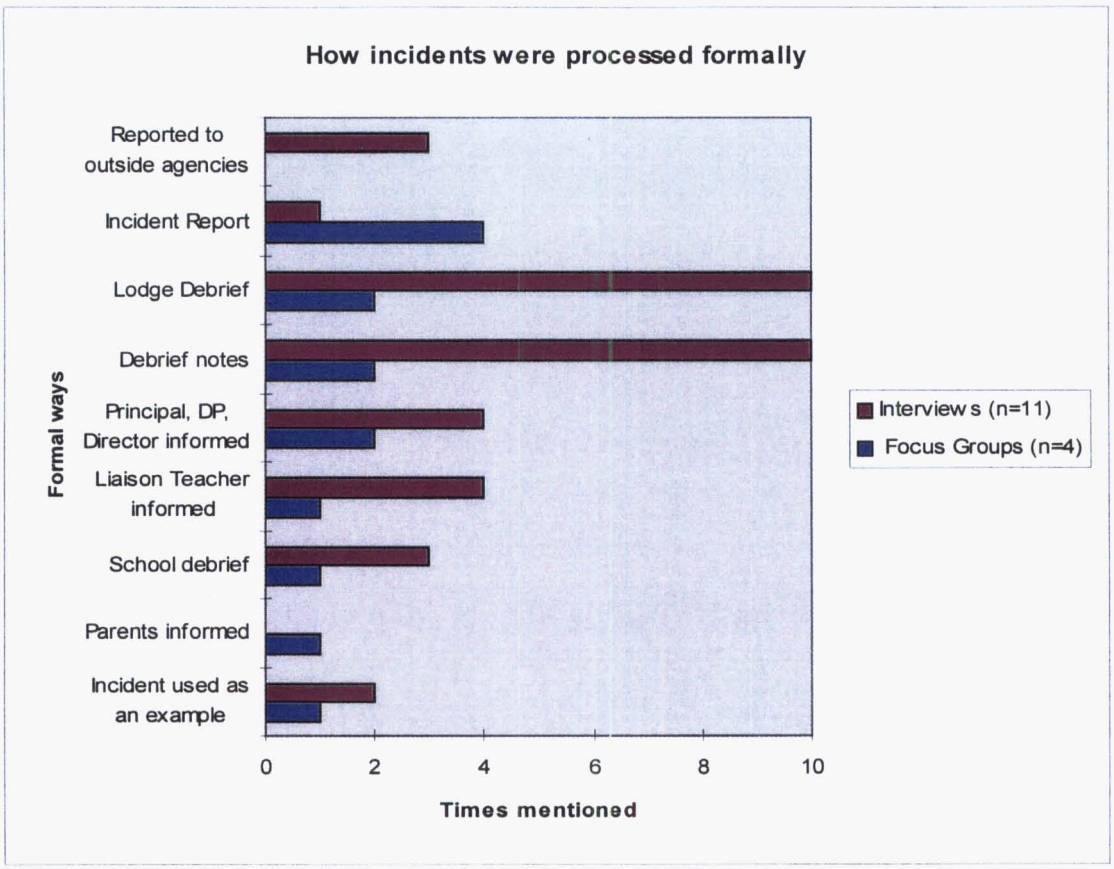


Figure 7.1 *Formal* ways used to process HIPO incidents

Focus group respondents identified an almost identical list of formal ways they used to process HIPO incidents, which differed in two categories only. They mentioned that parents were informed of the incident and they made no mention of outside agencies being informed. Figure 7.1 illustrates the formal ways interviewees (n=11) and focus group respondents (n=4[11]) used to process HIPO incidents.

[11] Of the five focus groups, one could not be drawn on ways they used to process events.

7.2.1 Debriefs

Respondents reported that incidents were always formally debriefed at the Lodge and sometimes back at school also. I asked respondents to describe how these debriefs functioned and what their purpose was. **Formal Lodge debriefs** took place:

> ... *at the end of the week, either Thursday evening or Friday morning* (Bruce). *All staff and helpers usually attend* (Agatha). *Incidents and accidents are logged* (Janice) *and we have lots of cups of tea* (Ezmerelda). *We look at incidents that could lead to ... a more serious effect, what was done about it and suggestions to try and ensure it doesn't happen again* (Agatha) *for example, did we have everything we should have had with us* (Janice).

Notes taken at the Lodge debrief were also routinely sent to the Liaison Teacher after the camp. Additionally, three forms of post-camp **school debriefs** took place according to respondents: informal, semi-formal and formal.

Informal chatting was very common, where staff on camp who had an incident would communicate this informally to the Lodge Liaison Teacher on return to school. Incidents were also chatted about to other staff over a cup of tea in the staff room in subsequent weeks after the camp. In some schools, this was the extent of post camp debriefing at school. In the busy school environment, anything further may not have been seen as necessary due to the full debrief already held at the Lodge.

Semi-formal meetings after camps were also routine in some schools. These were usually co-ordinated by the Liaison Teacher, who tried to get all staff who attended camp together to discuss it on their return. These could be arranged as a get together in the staff room on the Friday everyone returned, or a few days later at lunch time, although time constraints sometimes meant all staff could not attend or the meeting was missed for some camps. Where staff were unable to meet for any reason, the Jane (FG5, Liaison Teacher) would see staff individually after camp to see if there was anything they wanted to add to the Lodge debrief notes. Jane felt it was valuable to hold these meetings some time after the camp rather than immediately, to allow time for reflection and distance from events. The meetings also provided another forum for staff to express any concerns, if they felt they were unable to do this at the Lodge debrief. Jane sent any further feedback to the Lodge afterwards.

Formal meetings were held on occasions, usually after a serious event. Tommy described such a meeting after his incident. He said it was a thorough debrief to look at procedures, with staff involved, the Liaison Teacher, Deputy Principal and school nurse. Tommy said it was *'certainly the longest debrief I've ever been involved with'.*

In addition to the above, respondents mentioned two more formal ways incidents were processed on return to school. First, the Lodge debrief notes were gone through by the Liaison Teacher, and appropriate action taken on any recommendations. Sometimes, more serious incidents were transcribed onto a school accident report form and filed in the school for future reference, for example OSH or ACC purposes. Second, some incidents were used as examples to brief future groups in their preparation for camp.

7.3 Informal ways

Figure 7.2 shows the informal ways that interviewees (n=11) and focus group respondents (n=4) used to process HIPO incidents. Interviewees and focus groups identified similar

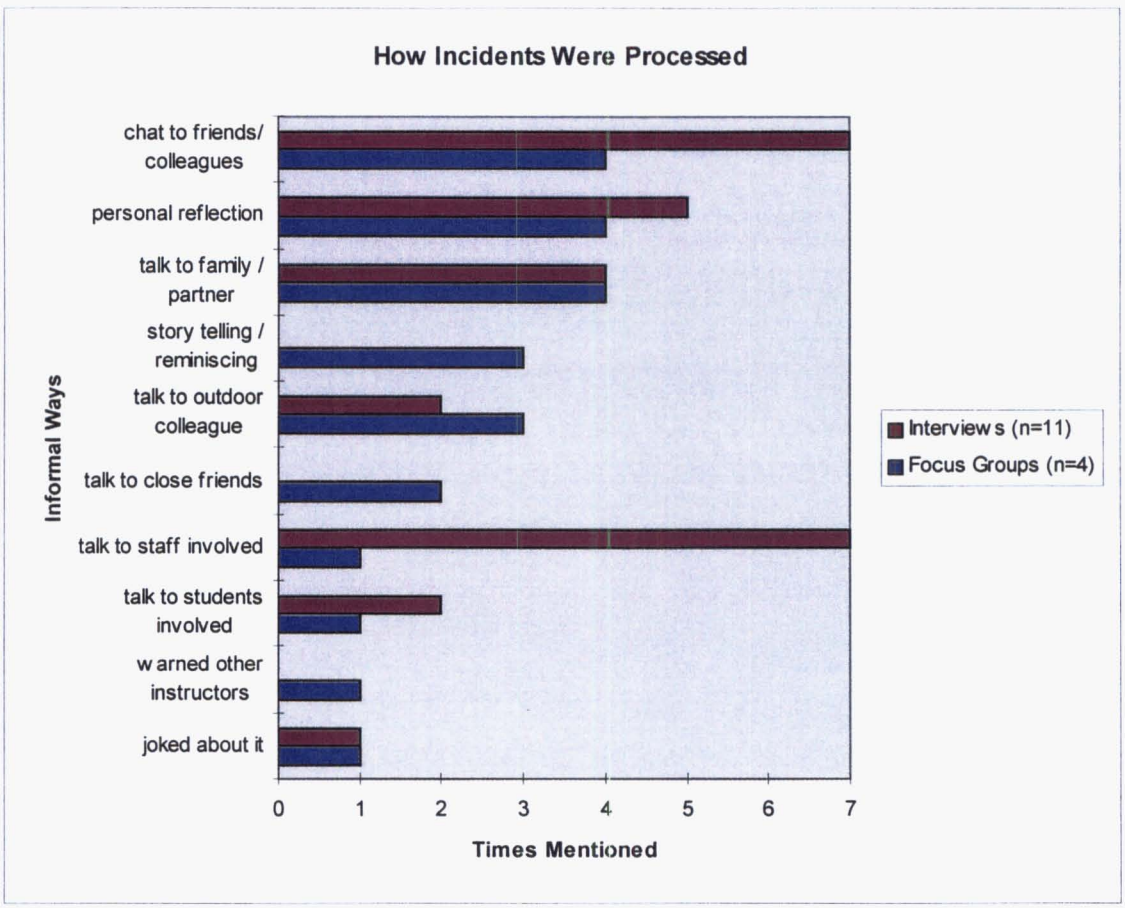


Figure 7.2 *Informal* ways used to process HIPO incidents

ways they had informally processed HIPO incidents. These were: chatting to friends or colleagues over a cup of tea; personal reflection through going over it in their minds or diary writing; talking to family, particularly their partner; talking to an experienced outdoor colleague; talking to other staff involved; talking to students involved; and joking about it. In addition, the focus groups identified a further three ways of informally processing an event: story telling and reminiscing about it; talking to close friend/s; and warning other instructors who lead the same activity in the same area about the hazards.

7.4 Helpful processes and conducive settings

In order to determine procedures for incident reporting and analysis which would benefit a school's risk management plan (research objective e), I asked respondents which methods they found helpful to process events; what kinds of settings were most conducive to reflecting on an event; and which were not?

7.4.1 Helpful ways of processing

It was important to respondents that the people they talked to about an event were able to relate to the situation. Respondents found the following ways most helpful in processing events: talking to friends and colleagues who work in the outdoors or go on camps; talking

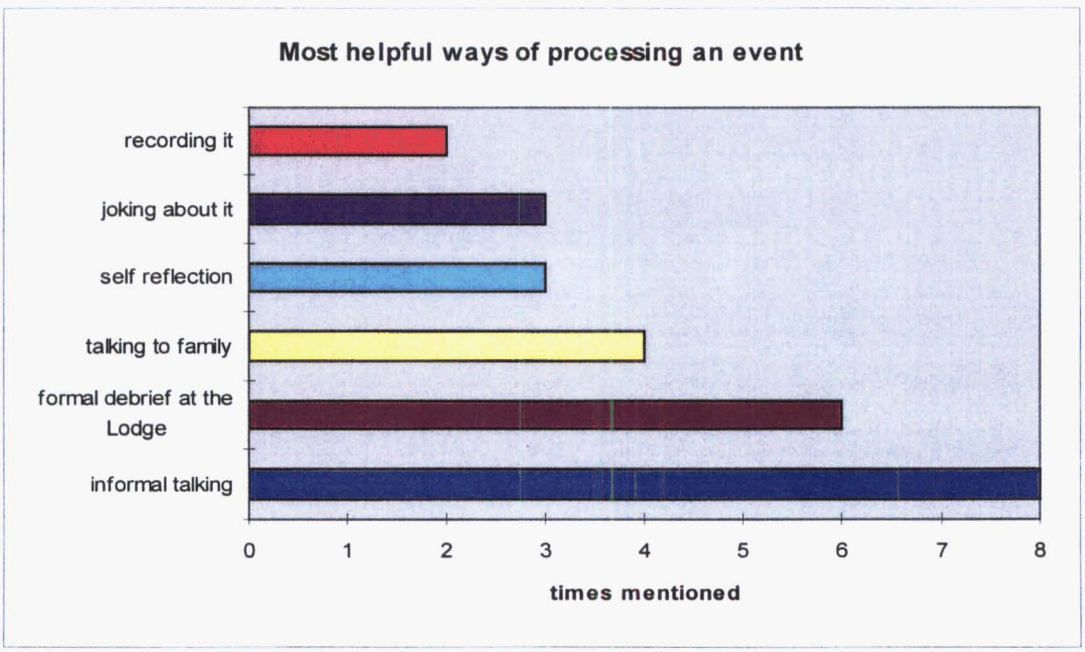


Figure 7.3 Most *helpful* ways of processing an event

to others involved in the incident including staff and students; talking to family for emotional support; formal debrief at the Lodge; self reflection; joking about it and making light of it afterwards; and recording it well. Respondents noted a range of reasons why they found the formal Lodge debriefs helpful in processing incidents. The following were typical.

- *experienced resident teachers to make recommendations* (Phoebe)
- *immediately is better as fresher* (Phoebe, Garth, Bill)
- *more structured* (Gintime)
- *all people involved are there* (Garth)
- *goal of learning and changing procedures within an institution* (Bruce, Gintime, Sue)
- *you get support if something happens to you* (Sue)

Respondents also found the debriefs valuable as remarked on by Fred:

> *...[they're] valuable because often people don't come and talk to you about things that are going wrong, they'd rather try and handle it themselves. So with a forum like that you've got the chance to state it as a fact rather than a gripe or a grizzle.*

Three respondents said that joking about an incident afterwards was a helpful way of processing it. Hale (1989) stated this was an important indicator of a close call.

> *... when especially frightening experiences end without harm, laughter and light hearted joking usually occur. This seems a natural emotional outlet and reaction to the potentially disastrous results that were apparent, yet too unpleasant to dwell upon* (p. 12).

Hale (1989) warned that *'amid the laughter, stories and good feelings it is quite easy to ignore or forget the writing of a close call report'* (p.12). Awareness spread instead by word of mouth. He believed that this in turn led to a lack of analysis followed by a tendency for incidents to recur and occasionally led to injuries and even fatalities.

Eric indicated that passing information on by word of mouth, beginning with a joke, was fairly common in the school environment.

> *... it's not until some time down the road, maybe at a function ... that it's let slip that 'oh, you know, such and such occurred' and everyone has a good chuckle about it. But at the same time you can see ... half a dozen light bulbs going on around that conversation as people suddenly think, 'hell, I almost went over there the other day... the same thing could've happened to me'*

Hale (1989) believed the important part of processing an incident was the formal reporting and subsequent analysis, followed by intervention to stop or alter the close call

circumstance. These final steps were most important in reducing accident potential yet least often practised after a close call according to Hale in 1989. Some would like reporting and analysis to be the norm in New Zealand schools as illustrated by Eric:

> *... if it'd been a formal, or an informal ... meeting of some sort, where people could say 'hey, this happened' ... these are the things that led up to it, these were the factors involved in it, let's file that, or put that aside and maybe look again at it later if necessary. But then, it's been voiced, others have heard it, it's become public information. And you learn from it, and ... it's a slowly changing thing ... I guess we see things like OSH trying to change them but, like even trying to encourage people to plan for worse case scenarios and come backwards from there, it can be quite difficult, because they're still stuck in a mindset that well, I don't want any of those things to happen, so I know that I'm going to avoid them. You're not saying you want them to happen, you're saying they're potentials. Just come backwards.*

At Rotoiti Lodge, many close call incidents are captured by the formal debriefing procedure at the end of each week. Interviewees attest to this with most (ten) saying their incidents were recorded (see Figure 7.2). This is commendable but some escape the net.

As mentioned earlier, Phoebe left crucial information out of her formal report of her incident. She said:

> *[In the debrief] I didn't mention myself, just the incident ... [the sick boy], and how I dealt with it, and we talked about having ... disinfectant actually there for use in the hut '.*

There was no mention of Phoebe's injured leg in the debrief notes kept by the Lodge. As discussed, Phoebe saw the incident as being the sick boy, but after listening to her story, I felt the HIPO incident was the whole trip, significant factors being Phoebe's leg injury which lengthened the trip considerably, her inexperience as a leader (her first leadership experience) and the bad weather. This combination could have led to a number of scenarios. I'm not sure if Phoebe realised the gravity of the situation. Her inexperience may have inhibited her ability to realise these factors were significant in her incident. Or, due to attributional bias, she may have chosen not to disclose these factors in the Lodge debrief. I believe the former is more likely, as Phoebe had no hesitation in including these details in setting the scene and re-telling the story of her incident to me.

Inexperience being a significant factor, I asked Phoebe how one came to be leader of a tramp at her school. Phoebe explained it thus:

> *...they obviously thought I could handle it ... I only had one trip to Rotoiti ... two years prior ... I was quite surprised ... frankly ... I'm not young ... I'm not strong in sport ... I really have to push myself to participate in things like abseiling ... I think my Head of Department accepts the fact that I relate well, especially with problem kids ... I had the qualities that he was looking for ... and ... fulfilled the criteria that he considers necessary for leadership ... it was a compliment, I just couldn't believe it when he asked me.*

Phoebe did not mention any outdoor training or experience she had for the job, indicating that these skills were not considered vital for leading students on a tramp by her school. This contrasts markedly from opinions of outdoor leadership experts reviewed in Chapter Three and raises a substantive issue underlying the obvious points emanating from the data. It is clear that, like Phoebe, some teachers who lead outdoor education activities are not experienced or qualified for the job and therefore not fully aware of the risks. While they may learn substantially from their epics, improving their leadership as a result, the question begged is should they be learning whilst leading students in such a demanding environment as the outdoors? Also, what social and professional climate exists in the outdoor education setting, where perceptions of preparedness for the task of outdoor leadership fall so far short of the requirements? These important questions are not the primary concern of this research, but signal areas for further research.

7.4.2 Conducive and non-conducive settings

Hale (1989) argued that reporting and analysis were critical steps following a close call to prevent a recurrence. Nadler and Luckner (1992) agreed reflection was an important stage in the experiential learning cycle, as was application of what was learnt in new situations. I contend the setting in which this occurs is also crucial. To elucidate procedures which may be useful for schools to facilitate this important process, I asked respondents what kinds of settings were conducive to constructive reflection on an incident and which were not. Bruce summarised many respondents' views:

> *...it depends on the context ... when I'm just informally talking with people, that's fine, but if somebody were to corner me and trying to be blaming me for something (laughs) then I would feel very uncomfortable ... and that's why I think it's really important to set up systems where people can do it. I think familiarity with the whole debriefing process is a big difference, because I've noticed a change in even my feelings about it ... that's taken time of being involved with the process and seeing the value of it ... When I'm in a group of people where it's the norm, then it's very easy, but when you've got a number who are not happy with it themselves, then ... it becomes difficult again.*

Respondents identified conducive and non-conducive settings for talking about incidents. These fell into five categories: places, forums, people, times and elements (see Table 7.1 below). Not surprisingly, most items on the conducive list had an opposite on the non-conducive list, particularly in the 'elements' category. I have arranged items in opposite pairs to emphasise this. For example informal, non-judgemental, non-blaming settings were thought to be conducive to talking about incidents while formal, judgmental and blame-based settings were not. If a school or outdoor education institution wanted to create a conducive environment for talking about incidents, the following would need to be present. An informal atmosphere, although a formal process would be fine if the programme was busy. The people involved would need to be familiar with the debriefing process within a culture that promotes reporting and discussion of incidents with a minimum of paperwork and a goal of acting on any recommendations. It would need to be a round table forum that was non-blaming, non-hierarchical, which happens soon after the event and away from students.

7.5 Knowledge transferred - to prevent similar events in future

I asked interviewees what was said and done about an event (if anything) afterwards (research objective d). They were also asked what knowledge, learned from the event, was transferred to prevent similar events in the future. Focus groups were asked what usually happened to information gained from an event.

Nadler and Luckner (1992) explained that

> *The last part of the experiential learning cycle is an essential stage. In essence, it is the primary reason that we spend time reflecting and processing. At this point, we focus on the central question 'Now what?' Individuals apply what they have learned during this experience to actual situations they are involved in...* (p.2).

Interviewees identified particular knowledge they gained from their incident, how and to where this knowledge was transferred. Respondents said their primary goal was to apply the knowledge in new situations to reduce the chances of a repeat incident.

Table 7.1 Settings - conducive and non-conducive to talking about incidents

	CONDUCIVE	NON-CONDUCIVE
ELEMENTS	• *informal (6)*[12] *comfortable, socially at ease* • *non-judgemental (2)* • *non-blaming (2)* • *non-hierarchical (2)* • *familiar with debriefing process, it's the norm* • *ego not threatened (2)* • *straight up (2)* • *open (2) trust (2) professional (2) sympathetic, sensitive receptive atmosphere, good working relationship with those involved* • *seems relevant, no retribution* • *accessible reporting system, min paper work* • *culture that promotes reporting, discussion and sharing of incidents, goal of learning* • *formal - if busy programme* • *formal process - self and peer feedback model* • *confidence in people in forum* • *fresh in your mind* • *students cannot overhear* • *quiet space [time] from incident* • *things are acted upon (2)*	• *formal* • *fear of judgement* • *blame-based atmosphere* • *male dominated hierarchy* • *people not happy with the debriefing process* • *threatening* • *lots of posture* • *staunch, concrete sequentialist, traditionalist debriefing situation (sequential - rigid, militaristic, of the old school)* • *hunting for a scapegoat* • *report time consuming* • *fear of misinterpretation of report* • *time pressured* • *supervisors taken away from responsibilities*
PLACES	Talking to adults • *staff room at school (5)* • *away from students at camp (3)* • *comfortable* • *bars* Talking to students • *the playground* • *in the corridor* • *in hut*	• *officey settings* • *a conference* • *pub* • *hospital*
FORUMS	• *Lodge debriefs (4)* • *Meetings back at school (2)* • *safe forum* • *round table forum*	• *debrief with authoritarian DP or Principal (2)* • *rigid* • *militaristic*
PEOPLE	• *friend/ instructor/ peer involved in outdoors (5)* • *interested friends/ others (4)* • *non threatening people*	• *person who wouldn't relate to situation (3)* • *authoritarian figure eg principal (3)* • *someone seeking to lay blame (2)* • *people not happy with debriefing process* • *somebody I don't know*
TIMES	• *meal or tea-break times (4)* • *while tramping with a group (2)* • *period after camp (2)* *on arrival back at school*	• *debriefs held when students unsupervised eg. in kitchen (2)* • *when pressures and constraints on time (2)*

[12] Number indicates number of times mentioned, no numbers means mentioned once

Each incident and the knowledge gained from it was unique, with little overlap between incidents. This was expected given the small sample (11) and diversity of incidents. A recurring theme however, was incidents were used as an example to prepare future students for camp in six cases. The types of knowledge transferred to new situations, ranged from technical matters to deep learning in the leadership area. I will use an example to illustrate this. Bruce's incident involved a student injuring her ankle on a snow craft course, whilst descending a spur from a snowy ridge to the bush. The group of approximately sixteen students and two instructors were delayed for three hours on an exposed spur in bad weather until a helicopter evacuated the injured student. Bruce applied the following knowledge to a similar situation in the future.

- *...the map had some missing information as it was [parts of] four [different] maps laminated together, so after the incident, I added the grid line numbers, map name and number to the Lodge maps*
- *[I] made students go a lot more quietly down until they reached the bush the following year*
- *[I] took a different, safer route down to by-pass a steep section*
- *[I] used the incident to illustrate why you need to take flies etc*

It appears that far from thinking HIPO incidents were insignificant events without the possibility of serious harm, my respondents recognised them as critical incidents which provided sharp lessons in honing judgement and decision-making skills. Without exception, interviewees used the opportunity to reconsider their actions and act more conservatively in future now they realised what the consequences could be. They also used it to illustrate what could happen. It may also be useful for Lodge or school staff to integrate what was learned from incidents into a specific training package. For example, all staff who lead the trip in which Bruce's incident occurred, could get together to highlight the above points and discuss strategies and routes for getting students safely down that section of terrain in the future. This would take about an hour and would be easy to arrange as the programme involves only one school.

7.6 Chapter summary

The purpose of this chapter was to describe what people said about an event and what they did about it (if anything) afterwards. Also, to elucidate procedures for incident

reporting and analysis (formal and informal) and determine which would be beneficial to a school's risk management plan (research objectives d and e).

HIPO incidents were talked about extensively by respondents, and more informally than formally. Formal methods of processing events included debriefs at the Lodge and/or school, recording it in an incident report and/or debrief notes, verbal report to principal, deputy principal, parents and/or outside agencies. In addition the incident was often used as an example to prepare future groups for camp. Informal methods included talking to colleagues or friends (especially those experienced in the outdoors), family (especially partners), others involved (staff and/or students), story telling, joking about it and personal reflection. Processes that respondents found most helpful to constructive reflection on an event included informal talking, formal debriefs at the Lodge, talking to family, self reflection, joking about it and recording it.

Settings which respondents found most conducive to talking about incidents spanned five categories: places, forums, people, times, elements. Respondents found places free of students such as the staff-room at school and the classroom at the Lodge ideal for talking about incidents. Safe, round table forums such as the Lodge debriefs and meetings back at school were also conducive. People they talked to needed to be non-threatening, involved in the outdoors or at least interested. Times most conducive to talking about incidents were down times such as meals or breaks. The following elements needed to be present in order for respondents to feel comfortable talking about their HIPO incidents: relaxed/ informal, non-judgemental, non blaming, non hierarchical, non-threatening, honest, where a sense of trust and confidence in others existed, open, formal receptive process, goal of learning, culture which promoted reporting and discussion of incidents, and a minimum of paperwork.

Settings which respondents found non-conducive to discussing their HIPO incidents included places such as an office where a rigid traditionalist debrief took place with an authoritarian principal or deputy principal, people who could not relate to the situation or those seeking to lay blame. Time constraints and leaving students unsupervised when debriefing were also seen as impediments to constructive reflection. In addition, the following elements needed to be absent in order for respondents to feel comfortable

discussing their HIPO incidents :threatening atmosphere, male dominated, people unhappy with debriefing process, where there was fear of judgement or misinterpretation of a report and a time consuming report procedure.

Respondent preferences for the types of settings where they could talk freely about their incidents bore out Joing's (1993) conclusions about changes to incident reporting procedures in the French rail industry. By building up a state of mind and a climate of trust in which employees would have no hesitation in reporting incidents, a better knowledge of what was not functioning correctly was achieved. This involved adopting flexible, error embracing management policies so the organisation could correct its behaviour by learning from its mistakes (Clark, 1980). Schools would do well to develop such a climate and procedures for the reporting of accidents and incidents in their outdoor education programmes.

All respondents reported that knowledge gained from their event was applied to new situations to reduce the chances of a similar event recurring. So learning as a result of a HIPO incident did not remain with the learner, but was applied to new situations to benefit personal and programme safety. This was the final and most important stage of the experiential learning cycle and the primary reason for reflecting and processing according to Nadler and Luckner (1992). This study highlighted effective means of processing incidents at Rotoiti Lodge, which was an important step in accident prevention according to Hale (1989). Hence it can provide a model for other, similar programmes, to follow. A refinement could be that in appropriate cases, specific training sessions be designed to pass on information learned from an event to other teachers and instructors that would benefit.

Finally, one by-product of processing HIPO incidents, was discovering some of the contributing factors to the events, which is the subject of the next chapter.

CHAPTER EIGHT Contributing factors to the HIPO incidents

8.1 Introduction

In Chapter One I discussed the point that researchers had shown HIPO incidents and serious accidents to be similar, *"...the difference between a near hit and a fatality is often only a few millimetres or a fraction of a second"* (Mitchell, 1998, p. 40; also supported by Bird and Germain, 1992; Hale, 1989; Johnson, 1980). They stressed the importance of investigating contributing factors to HIPO incidents as they had similar causes to serious accidents. Consequently, objective c was to identify possible causes, ascertain patterns common to several incidents and structure them into recognised models of analysis. In doing this, I hoped to provide information to improve safety in Lodge and similar programmes and provide a future basis for comparison.

8.2 Contributing factors to the HIPO incidents

To identify contributing factors to the eleven HIPO incidents, I listed factors identified by respondents, added factors from the story, then checked Lodge incident reports. Consistent with the literature reviewed, HIPO incidents in this study were the result of a multitude of factors. Figure 8.1 shows a range of six to twenty five factors.

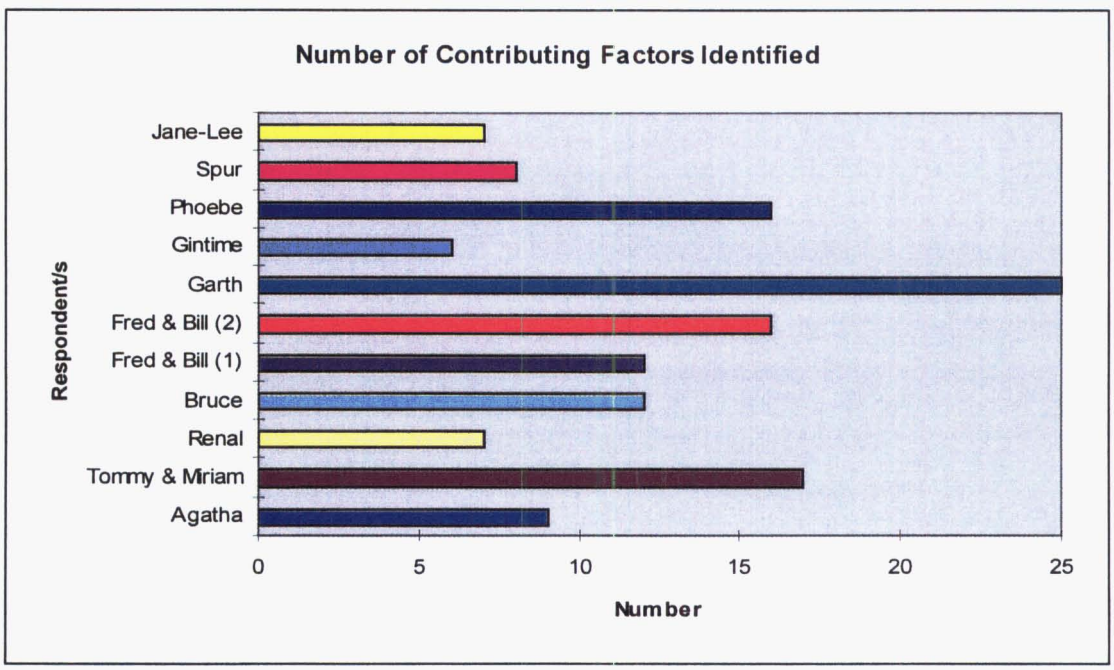


Figure 8.1 Number of contributing factors to incidents identified

The types of factors leading to incidents in the study included significant and common causes of outdoor accidents from the literature along with those derived from the data. These are displayed in Figure 8.2 below and explained in the rest of the chapter.

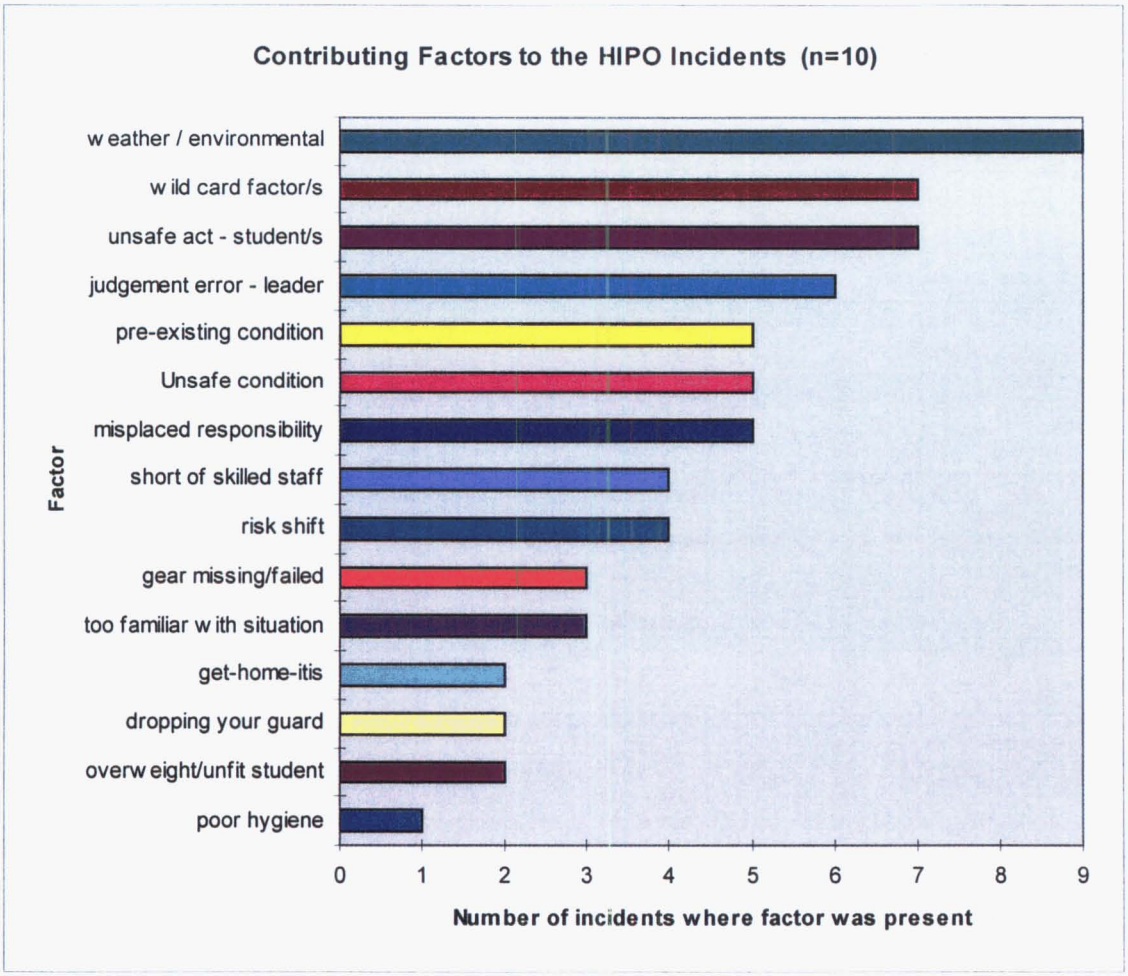


Figure 8.2 Contributing factors to HIPO incidents by themes

8.2.1 Significant causes from the literature

The following summary of factors, significant in the literature, featured in the stories. More information on the factors can be found in section 1.4. Factors are highlighted to relate them more easily to Figure 8.2 above.

Like Helms (1984), this study found accepting increased levels of risk contributed to many incidents. Helms concluded that risk shift, get-home-itis and familiarisation with the situation were the three largest contributing factors to accidents. Garth, Agatha, Gintime, Fred and Bill described **risk shift** (where groups make riskier decisions than individuals) occurring in their groups. For example Garth thought they pushed the boundaries more

with an extra instructor and two extra adult assistants. The day before, with only two instructors, they took more conservative decisions. **Get home-itis** (forgetting everything once the end was in sight) was a feature in Bruce and Jane-Lee's stories. In their haste to get everyone back to the Lodge, a number of risks were overlooked. **Too familiar with the situation** (where experienced people who knew the territory well, had a reduced perception of the risks) manifested itself in Fred, Agatha and Bruce's incidents. The leader was feeling ok in the conditions, while students or teachers were stretched. Bruce's comments illustrate several of these factors as well as **dropping your guard**:

> *I think we had probably let our guard down a bit, because we were heading home ... we thought we were over the worst ... I was quite happy cruising along at the front of the group, thinking it was plain sailing, and maybe if I'd been stopping kids and cautioning them, it wouldn't have happened ... I'm really happy on that sort of country and I should have probably stopped and thought right, there might be some people here, although they're travelling alright ... they're not as aware of the dangers as I am.*

Meyer (1979) found that the majority of accidents in adventure programmes were the result of a combination of any of the following: an unobserved or underestimated **unsafe condition**, an **unsafe act** on the part of a student or an **error of judgement** on the part of staff. These factors contributed to many of the HIPO incidents in this study as illustrated in Table 8.1 below.

Table 8.1 Principal causes of major accidents in adventure programmes (Meyer, 1979), showing incidents where factor present (by respondent name).

Unobserved or underestimated Unsafe Condition		Unsafe Acts - Student/s		Errors of Judgement - Staff due to:	
Swift water	Gintime	**Poor position**	Bruce Tom/Miriam	**Unexpected or new situation**	Gintime
Loose rock		**Unauthorised procedure**	Gintime Phoebe, Spur Fred/Bill a	**Desire to please others**	Renal Phoebe Agatha
Inadequate area security	Tom/ Miriam	**Unsafe speed**		**Misperception**	Bruce Agatha
Unexpected water/ improper clothing	Agatha Garth	**Inadequate water/ nutrient intake**	Garth	**Fatigue/ distraction**	Phoebe Garth Fred/Billb
Unexpected Snow[13]	Fred/Bill b Garth				

[13] This category added to original table.

Haddock (1996a) identified **wild card factors** in a previous study. These factors involved unpredictable behaviour that took the leader by surprise and put them in a reactive mode, often without all the information. Seven incidents had wild card factors, three of which had two, as illustrated in Figure 8.3 below. Jane-Lee's classic wild card factor is described in section 5.3.4.

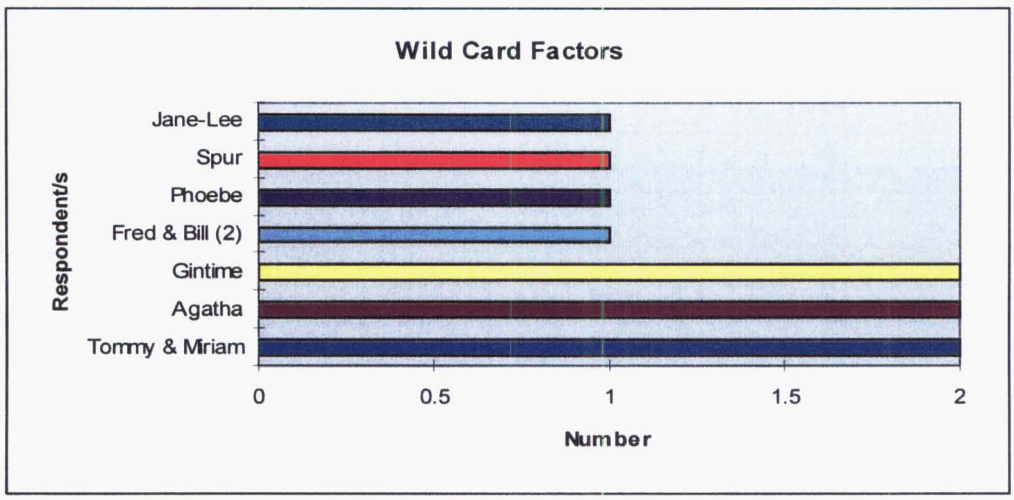


Figure 8.3 Number of wild card factors present in incidents

8.2.2 Significant causes derived from data

Further common significant factors were derived from the data as follows. **Environmental conditions**, particularly bad weather and cold contributed to ten of the eleven HIPO incidents. These factors are detailed in Figure 8.4 below:

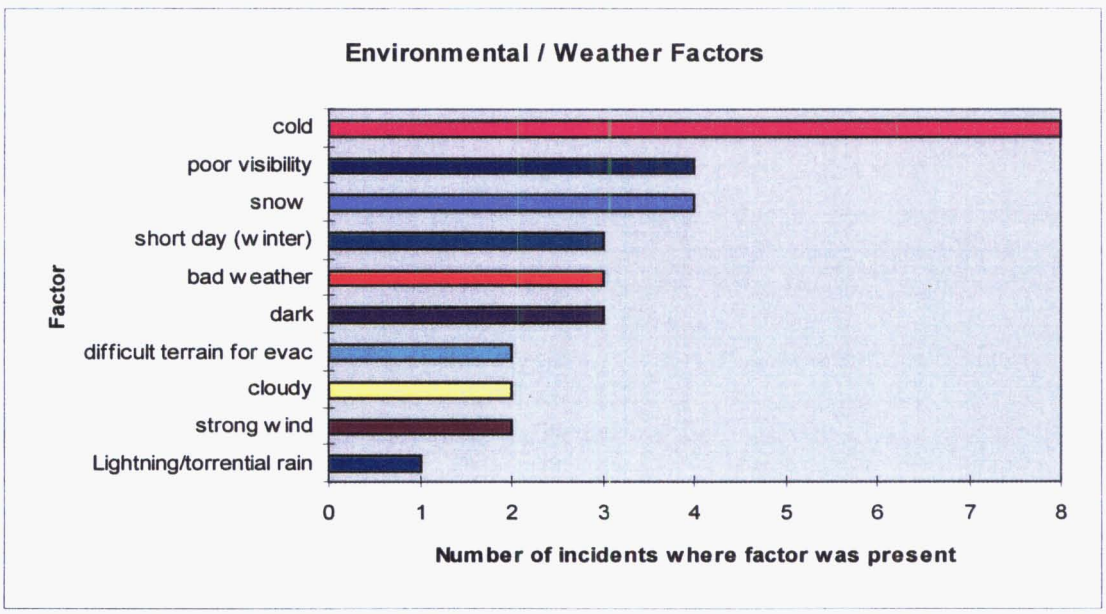


Figure 8.4 Environmental factors present in incidents

Activities involving cold conditions, particularly snow, were significant in a previous analysis of accidents and incidents at Rotoiti Lodge Outdoor Education Centre (Haddock, 1993b). It is important to emphasise the setting here. Rotoiti Lodge is situated at the northern end of the Southern Alps at an altitude of 620 metres above sea level, so it is not unusual to get cold and wet weather or snow at any time of year. Such conditions are challenging for novices to cope with so appropriate gear and experienced leaders are essential for safety. If an incident occurs, cold and wet conditions serve to exacerbate the circumstances, as does the remoteness of the area, as illustrated by Fred and Bill's story. They, with a teacher aid, took a group of fifteen learning development students, including an overweight student who was extremely slow, unfit and unmotivated, on a tramp around Lake Rotoiti in August.

> **Fred** *...on the way up he was dragging the chain, it was a nice fine day ... we got him up there after ... a fair amount of cajoling and grizzling ... The following day, it had snowed over night ... I made a decision to go ahead [and complete the Lakehead circuit] ... As we moved, it was starting to snow, it was only snow showers, flurries coming through ... we kept in tow most of the way until we got to about Whiskey Falls ... after Whiskey Falls the snow was starting to settle quite a lot. I decided, well there's no point in going back, because it's a lot longer to go back than to push forward, thinking that the mini-bus was going to be there [at the road end]. Eddie was really dragging the chain ... So we ended up with Sue [the teacher aid] ...walking with Eddie and Bill as well.*
>
> **Bill** *... That put me in an awkward position, I ... didn't know whether to keep up with Fred and his group, or stay back with Sue. Sue kept saying 'you go on' but I kept worrying that, when the snow started, whether I should have stayed with her. In the end I kept going, I was quite a way behind you guys. You've walked that track many times, that's the first time for me, and when the snow come down, in that clearing, it's quite hard to follow ... I was walking back on my own, I had to really concentrate on where I was going ...*
>
> **Fred** *... with the snow ... all the kanuka and stuff was just folded over ... we pushed right through [but] the mini-bus wasn't there, which complicated things as well ... they dumped their packs there ... on the road, and somehow, we hoped the van would've turned up ... and I turned around and walked back to pick up Eddie and Sue. His major problem was his mind ... he just winged and moaned and carried on ...*
>
> **Bill** *... With the other group ... a couple of them weren't togged out properly ... it kept snowing and snowing ... and I was pretty tired by this time and I had that sore foot. And a couple of them wanted to lie down on the side of the road and they were quite serious about just having a rest ... had they been on their own, they wouldn't have got off their arses and they would've stayed there ... our group*

fractured, walking down the road. Damn hard to keep them together ... and I was getting knackered and grumpy.

Many of the factors discussed so far are illustrated in the above story. The decision, at the beginning of the day to go ahead and complete the Lakehead circuit[14], in my view, pushed the group's limits. The more conservative option to return the same way would not have pushed the group's resources to the same extent as they would have been back at the Lodge by the time the snow really set in. The snow compounded their problems, particularly that of keeping the whole group warm. This could only be achieved by keeping them on the move, which meant splitting the party. Once split, the smaller party was weakened considerably and communication was affected. Another complication was that staff back at the Lodge assumed they would return by the quickest, easiest route, due to the weather and the nature of the group. So the van was sent to a different road-end, meaning that it was not awaiting the group at the end of their arduous tramp. The disappointment of not seeing the van and the further four kilometre walk in heavy snow meant students' morale and physical resources hit a low point at this stage.

On the positive side, this group had three staff members due to the nature of the group. Usually one staff member would be on their own or with an assistant. Fred and Bill contemplated this: *'We'd all be sitting there with Eddie, or leaving him behind ... 'to hell with ya!' What would you do? Safety of the fourteen as opposed to one* (Bill).

The extreme weather conditions had not been experienced by Fred on this trip before, although Fred and Bill had experienced a strikingly similar incident on a previous trip to Bushline Hut which, being higher, is more prone to snow conditions. Again Bill remained behind the main group with two slow students on the way up. It was snowing and one student sat down and refused to go any further. After reaching the hut with the main group, Fred returned to assist the stragglers. They did not have far to go, and did make it. Fred said he did not expect such conditions on the Lakehead trip and was surprised to hear the resident teacher say it was not unusual.

[14] Completing the circuit to the road-end would take a minimum of four hours tramping with an average party. A slow party in snow conditions could take an extra two hours. The road end back to the Lodge is an extra hour, a total of seven hours. The alternative was to return the same way, a three hour tramp with an average group. The Lodge was a further 15 minutes walk from the road end. A slow party in snow conditions could take four to four and a half hours to complete the trip.

This reiterates a theme already developed in this thesis. As Charlie pointed out, a particular kind of incident may only happen once in a person's experience, so they don't always see the bigger picture. Helms (1984) substantiated this in identifying that the majority of serious mountaineering injuries and fatalities examined in two studies, were preceded within one year by a near miss incident or an accident of a parallel nature in the same area. Although the same factors had been present in previous years the group had undertaken the activity, the leaders or institutions had failed to recognise them as important. Other authors also identified this (Brett, 1994; Kauffman, 1989).

This highlights the problem of having teachers who come to the Lodge once a year, leading trips in an environment where extreme conditions are possible at any time and for which they have little experience and are ill prepared. Resident teachers at the Lodge experience many seasons and environmental conditions over time so are more prepared for extreme conditions and used to adapting their decisions more conservatively to suit. But resident teachers cannot cover all groups in this programme, as discussed in Chapter Two.

Haddock (1994) examined this problem. She found that of the 69 teachers currently leading the Lakehead tramp, 54 reported they had experience equivalent to the National Standard required of a voluntary Bush 1 Instructor (leading below the bushline). Therefore 15 were leading the trip without this baseline of experience. Of the 55 teachers currently leading the Bushline tramp, four reported they had the skills and experience necessary to lead trips above the bushline in winter conditions. A further 45 reported experience similar to that required below the bushline and for six, their experience was well below this level. These staff would be operating in B or C zones (on the operation zones model, Figure 4.3) in good weather, however they would be operating in C or D zones in poor conditions (rain, snow, cold). Yet all staff could end up leading in such conditions, as happened in two incidents included in this study (Phoebe and Fred/Bill). Thus the situation could result in staff exceeding their competence, compromising their judgement abilities and putting themselves and their students at risk.

Fred and Bill's story worked out happily, but things could have gone wrong. Of concern in the Lodge programme, is how often teachers end up leading students on trips where conditions exceed their abilities. In other words, a tramping trip which started out in good

weather as a level two trip on the operation zones model, is changed to a level three when it snows, but the teachers' and students' abilities remain at levels one or two. As already discussed, this was an inherent risk in the Rotoiti Lodge programme, and may be the case in school outdoor education programmes elsewhere in the country. I believe this is a management problem not a teacher problem. Teachers volunteer to assist on school camps while Boards of Trustees and Principals, as managers, are responsible for programme standards and resourcing, including staffing. This issue is addressed in more depth in section 8.3.2.

Five respondents talked of **mis-placed responsibility** with staff or student/s when a staff member or student was too inexperienced and failed to carry out a responsibility given to them or proved to be irresponsible. When responsibility for managing certain risks is placed with someone other than the leader of the outdoor activity, this is called risk transfer (Ewert, 1984). It is a risk management option when considering how to manage certain risks. This is an acceptable strategy when the party that responsibility is transferred to is competent to manage the risk, but problematic when they are not. Mis-placed responsibility was a factor in six cases in this study, as illustrated in Figure 8.5 below. In three cases the responsibility was transferred to staff (by Tommy, Garth, Agatha) and in a further three to students (by Spur, Tommy, Fred & Bill).

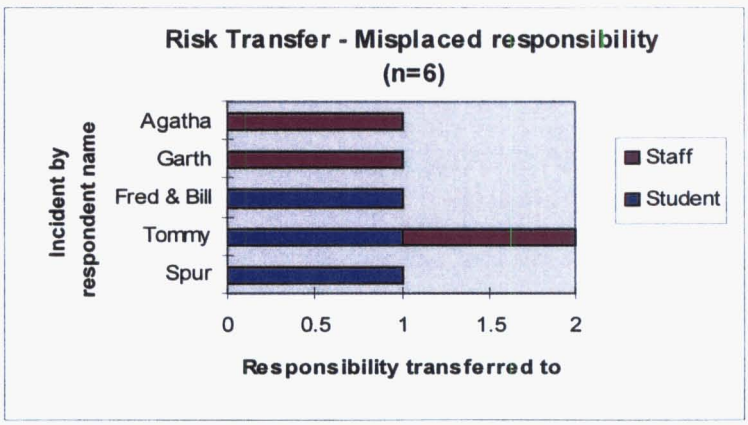


Figure 8.5 Incidents where responsibility was mis-placed with student or staff (by respondent name).

An example where responsibility was transferred inappropriately was in Tommy and Miriam's incident, where two cases of risk transfer proved to be mis-placed. One instance

involved a student while the other involved a staff member. Tommy, Miriam (teachers) and a seventh former assisted the Lodge resident teacher (Meg) on a day of caving. Approximately 25 students were divided into three groups. Meg took eight or nine students and one teacher or assistant into the caves at a time for one and a half hours. Meanwhile, the other two groups did an activity or got prepared for their caving trip with the other staff member, who had been briefed by Meg beforehand.

The incident occurred on the third trip into the caves. During the trip, a student slipped part way down a deep hole but was caught by Tommy just in time. Contributing factors to this were the student's Lodge hired torch went out as she approached the hole and the student assigned to guard the hole, did not do his job. Another student (Rosie) had an asthma attack as a result of being frightened by the first incident. She did not have her inhaler with her, but Meg had a spare in her first aid kit, although on its expiry date. Subsequently, Rosie had prolonged breathing problems, preventing her from getting out of the caves unassisted. Her difficult evacuation from the caves took three hours. Tommy reflected on possible contributing factors to the incident. First, where responsibility was mis-placed with a student:

> ***T.*** *...as we were going around the cave, Meg had at certain points asked people to volunteer to go in behind her or to do a particular activity. And within the group there was one boy that continually offered and nobody else did ...and I said to one of the other boys, as we were going along, why don't you offer to be the next one. And... leading up to the incident... when Meg asked, this guy didn't respond at all. And no one did, it was all very quiet, and then, finally ... this other boy... said 'oh I'll give it a go' ... I've felt bad about the pressure I'd put on that kid for a start ... I was unhappy with myself, what I'd done.*
>
> ***I.*** *Was he the one guarding the hole?*
>
> ***T.*** *Yeah, now, in fact, [he has] not turned out to be ... a particularly ... reliable person, and subsequently ... his career is quite interesting... Right so, that's something that sort of gnawed at me a bit for quite some time, and I still think of that, did I do something, at that beginning, which contributed to this whole thing? And so ... he went in, and was there to guard the hole and to direct the people to go up into the 'Birth Canal' [a tight squeeze] part of the cave.*

Second, where Meg had transferred responsibility to Tommy to ensure the students had all the right gear *before* coming into the caves. Tommy said:

> *And then, this quiet little voice just further along said ... 'Rosie is having an asthma attack'. And I remember my reaction was Oh God! 'Is she an asthmatic?' 'Yes.' 'Has she got her inhaler?' And then 'No'. And I thought, did I ask? And you know, I didn't ask. I didn't check before we came in, didn't think about it.*

This situation reiterates a theme which has come up already in this thesis, that of teachers who have limited outdoor experience, or who are not working in the outdoors regularly, failing to carry out responsibilities which are critical to safety. Furthermore, a 'trap' situation is prevalent because specialist outdoor staff *rely* on these teachers to carry out some responsible roles such as checking students have the right gear: clothing, torch and medication with them. At the time of the research, two specialists were usually shared among four groups over the week. On the caving day, one specialist was shared among three groups. So it is not surprising that responsibilities were not always carried out effectively, when staff did not have the training, skill or experience for the job.

Additionally, staff often found activities like caving challenging themselves, so may not be in a position to cope with much responsibility outside of looking after their own needs. This is best illustrated by Martin and Priest's (1986) operation zones model, which shows that if you are challenged, you need to concentrate on yourself as your competence barely matches the activity demands. In order to take responsibility for others during an activity, you need to be operating in a state of 'unconscious competence' (Raiola, 1990) or in A or B zones on the model.

Five respondents' noted a **pre-existing health condition** contributed to their HIPO incidents. These were blood in urine (Renal), students infected with vomiting bug (Jane-Lee), flu (Agatha), torn muscle (Phoebe) and hyperventilation/asthma (Tommy). Some conditions were known to staff in advance while others were not. Tommy's school changed their medical consent form as a result of the incident he had to deal with. Staff felt there was not enough room for care-givers to write adequate information about health conditions on the form, leading to inadequate information about the student being available during the incident.

Four respondents identified that a **shortage of skilled staff** contributed to their HIPO incidents (Jane-Lee, Agatha, Tommy, Garth). It was also apparent in several other stories that this was the case.

Missing or failed gear contributed to three incidents (Tommy/Miriam, Fred/Bill, Garth). Missing gear included an inhaler, polypropylene and other warm clothing, paper and pencil

to write emergency information down and the non-availability of the mini bus. Failed gear included a torch and the inhaler on its expiry date.

Overweight and unfit students were central contributing factors in two of the HIPO incidents. Bruce said the student who injured her ankle was *'not as fit as some of the others ... [and being] overweight made it difficult to shift her'*. Her injury effectively immobilised the group for three hours on an exposed spur in bad weather until help arrived. Fred described Eddie as a slow, unmotivated student who was overweight but not the biggest kid in the group but he was physically unfit and a blob. Eddie's slow progress on a tramp led to staff splitting the party once snow began falling heavily, as it was difficult to keep everyone warm.

Poor hygiene led to the rapid spread of a vomiting bug on Jane-Lee's camp where approximately fifty students and staff fell ill, some on tramps away from the Lodge.

In summary, I have discussed just over half the factors identified as contributing to the HIPO incidents in the study. These were those found to be significant causes of accidents in the literature and others which were common to several events and/or seemed significant. Having done this, I will examine some models for incident analysis.

8.3 Tools for incident analysis

A number of accident and loss causation models have been developed over recent years to analyse events, to determine causes and possible areas for remedial and preventive action. Such tools are useful for examining catastrophic events where losses have been high like the Challenger Space Shuttle accident or HIPO incidents where losses have been minimal. Research shows that serious accidents and HIPO incidents are complex events resulting from a multitude of causes over several different stages.

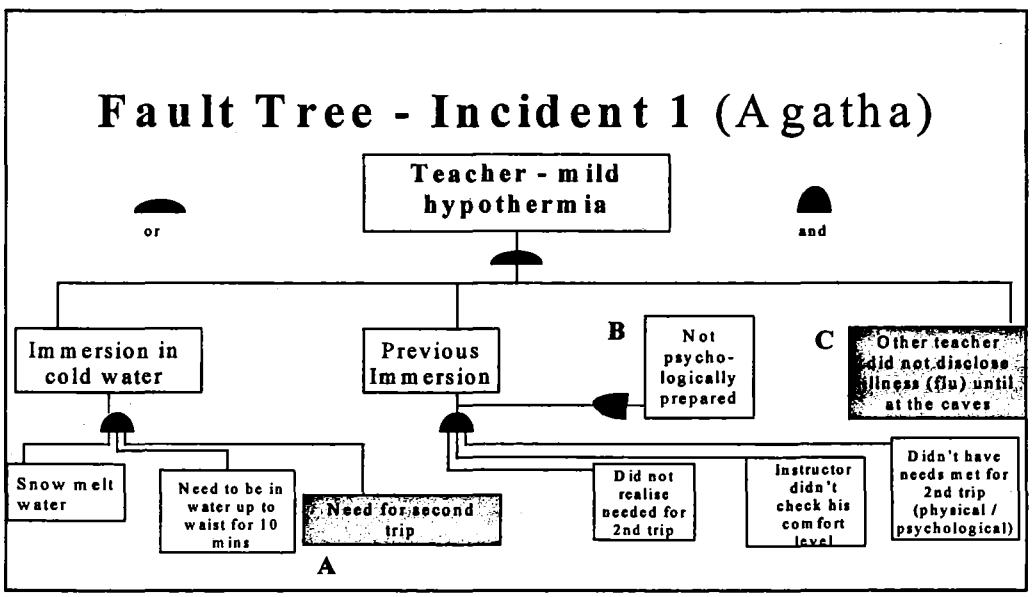
Current work indicates that accident causation is more web or tree-like than sequential. As a result, Fault Tree Analysis (Johnson, 1980) has been designed to identify all possible hazards with new technology as a pre-emptive loss control tool. Or it can be used after an event to determine all possible contributing causes.

Authors (Bird and Germain, 1992; Kates *et al*, 1985) have attempted to simplify these models, retaining key points to enable the analyst to identify critical factors which led to the accident or incident. In doing this, they imposed a sequential framework by dividing causes into different categories or stages which take account of temporal and systemic influences. Bird and Germain's research identified that the causes of most accidents can be traced back to a lack of management control. The following is an examination of these tools.

8.3.1 Fault tree analysis

Fault Tree models begin with the incident. Causal factors are linked to the incident by 'or' or 'and' gates. An 'or' gate means that only one of the causes were present (either x or y or z). An 'and' gate means that all causes were present (x and y and z). Agatha's incident, where a teacher suffered mild hypothermia on his second caving trip, has been analysed using a Fault Tree model. Barry filled in for a teacher who had the flu' and was unable to go into the caves at the last minute. Students would have missed out if he did not do this.

The Fault Tree showed a multitude of factors, many involving social and professional pressures (shaded in diagrams), which led to a teacher getting mild hypothermia. The first tree has three areas (A, B, C) which require trees of their own. This is a simplistic analysis, more investigation may reveal many more factors (the Challenger Space Shuttle accident fault tree was over 300 pages). Social and professional pressures on staff to lead activities, highlighted in this simple analysis, signal an area for future research.



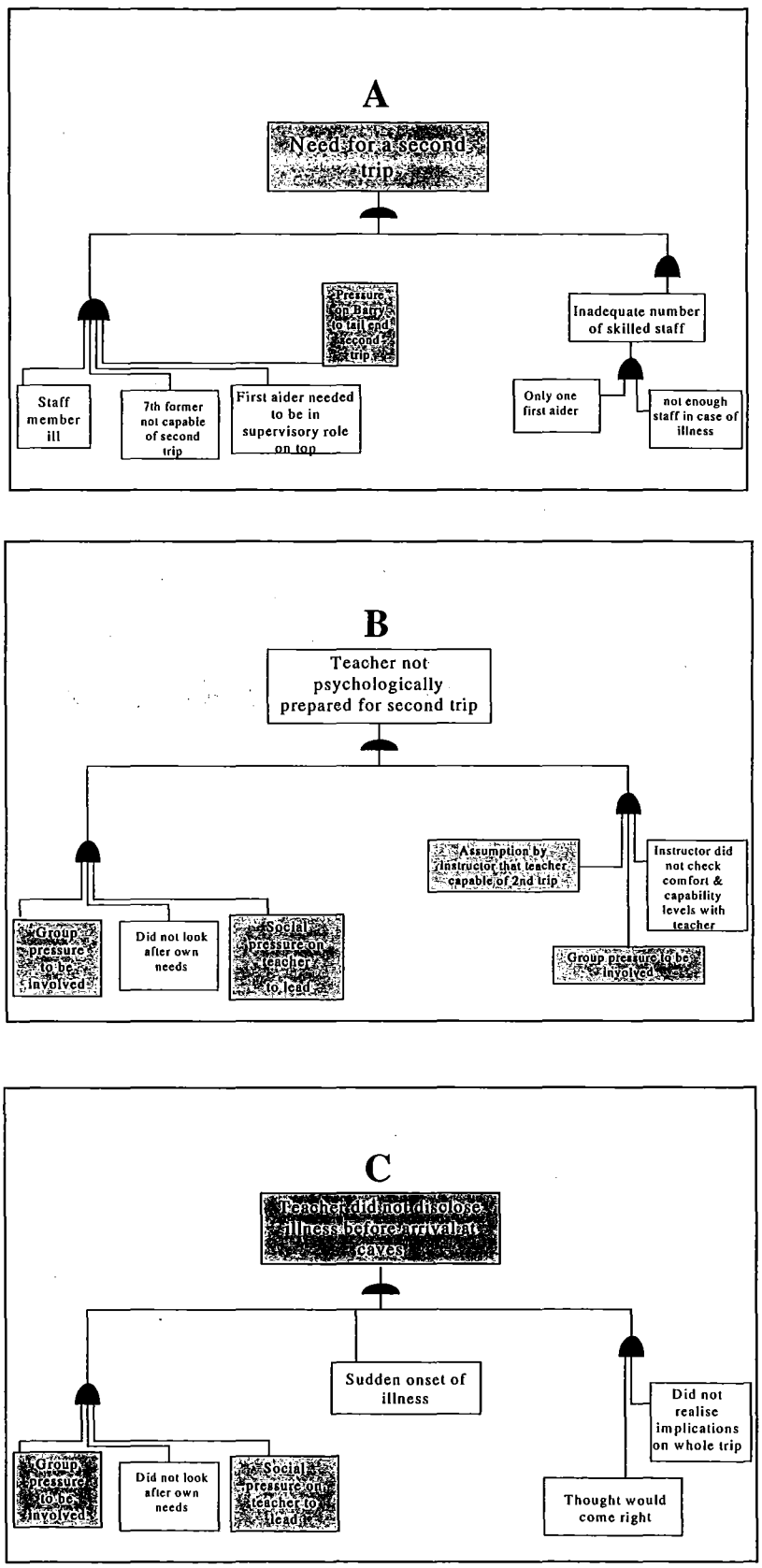


Figure 8.6 Fault tree analysis of incident 1 (teacher, mild hypothermia)

8.3.2 Causal pathways / pathways to change

Bird and Germain's loss causation model (figure 8.7 below) incorporated five stages of an accident/ incident, originating from a lack of management control.

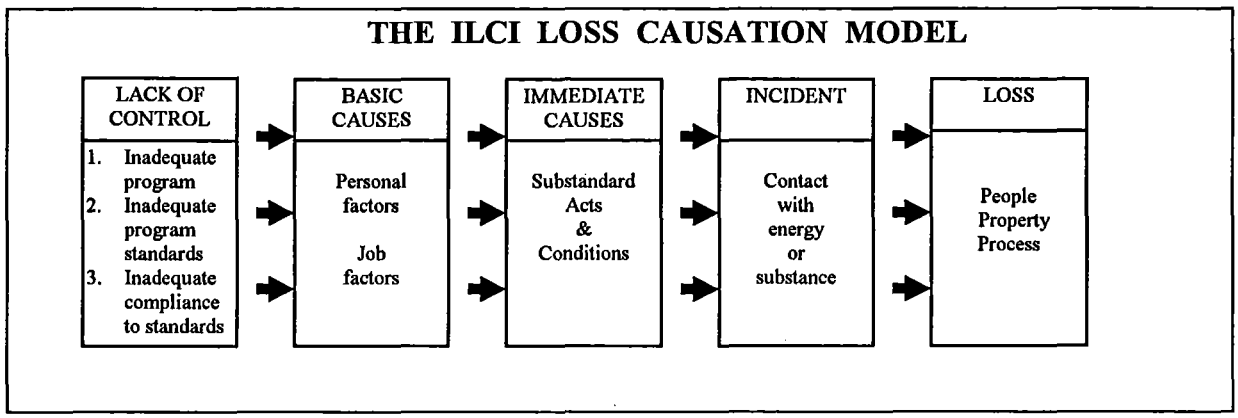


Figure 8.7 Loss causation model (Bird and Germain, 1992, p. 22)

Kates *et al*, identified six stages of an accident/incident and notably, identified pathways between each stage where action could be taken to block or mitigate events from culminating in a serious loss. Haddock (1993a, p. 71) amalgamated these models to produce the Pathways to Change model (see Figure 8.8). These authors sought to simplify the web-like structure of an accident or HIPO incident into a linear model. In doing this, they recognised an accident or HIPO incident was not purely a sequence of events but acknowledged the multi-linear links between causes. Figure 8.8 below is an analysis of Agatha's incident using the Pathways to Change model.

The analysis clearly showed that there were opportunities (pathways) between different stages of the event where strategies could have been used to block the progress of the incident and mitigate losses. Additionally, a lack of control at institution or management level was a systemic or root cause of the HIPO incident. Although staff did their best to lead students at Rotoiti, there was no guarantee that school staff were suitably experienced for the job, yet the programme relied on them leading some activities. So while standards and policies were in place for the activities, inadequate specialist outdoor staff to carry these out adequately was a weakness in the structure. This was a management rather than a staff problem, as management have responsibility for ensuring national industry standards are met and resourcing the programme accordingly, which includes staffing. This has been a recurring theme in this thesis.

Causal pathway analyses of all incidents in this study can similarly be traced back to the management level of responsibility. This is consistent with industrial research, where the majority of serious events can be traced back to a lack of management control (Bird and Germain, 1992).

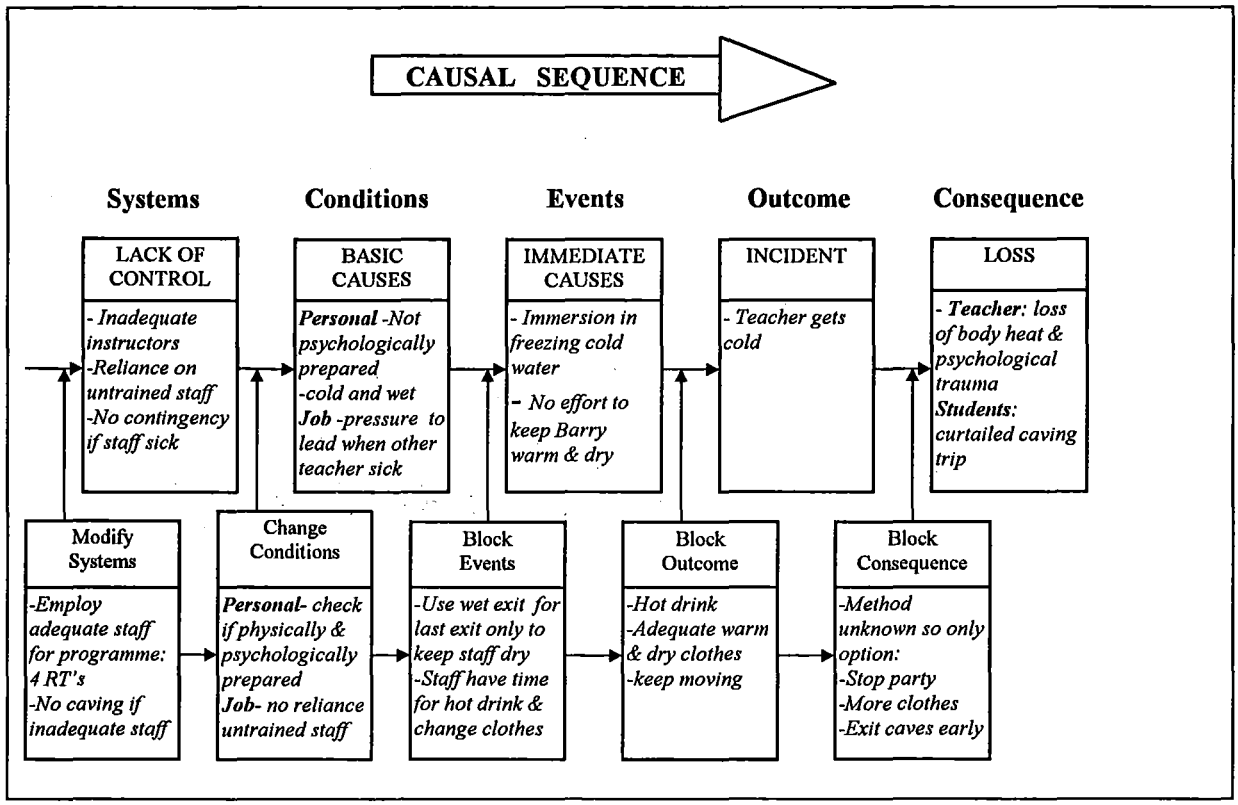


Figure 8.8 Pathways to Change - Incident 1, Teacher – Mild Hypothermia (Adapted from Bird and Germain, 1992; Kates *et al*, 1985 by Haddock, 1993a)

8.4 Chapter summary

The purpose of this chapter was to describe possible contributing factors to the HIPO incidents to ascertain patterns common to several incidents and to structure these using recognised models of analysis (research objective c). Consistent with the literature, HIPO incidents in the study were not the result of a single cause. Interviewees identified from six to twenty five contributing factors to their incidents. Some factors identified were common and significant causes of outdoor accidents in the literature, for example: risk shift, familiarisation with the situation, get-home-itis, unsafe condition, judgement error (leader) unsafe act (student), and wild card factors.

Other factors were derived from the data. Not surprisingly given the setting, environmental conditions, particularly bad weather and cold featured in ten of the eleven HIPO incidents. Responsibility was misplaced with a student or staff member in five incidents. This was a feature of concern, as the way Rotoiti Lodge was staffed at the time of the research, necessitated that inexperienced staff or students were routinely relied upon to carry out tasks which were critical to safety. This situation was typical of many school outdoor education programmes at the time of writing. Other factors featuring in the data included pre-existing health condition, shortage of skilled staff, missing or failed gear, overweight and unfit student and poor hygiene.

I structured incidents using two recognised models of analysis, Fault Tree Analysis (Johnson, 1980) and a Causal Pathway (adapted from Bird and Germain, 1992 and Kates *et al*, 1985 in Haddock, 1993a). Fault tree analysis showed HIPO incidents to be complex events involving numerous variables interacting in different ways, reinforcing that serious incidents were more web or tree-like than linear and therefore complex events which were difficult to manage and predict. The fault tree analysis reinforced the hindsight bias (Philipchalk, 1995), that we tend in looking back, to overestimate our ability to foresee actual consequences. The causal pathway analysis showed that incidents had multiple causes that were spread throughout several different stages of an incident. Between stages were pathways where intervention could mitigate losses. Notably, incidents were often the result of factors which only management had control over, for example, employing enough trained staff. This was identified as an underlying cause of several incidents in this study.

CHAPTER NINE Conclusion

9.1 Introduction

This thesis has examined several dimensions of incidents in outdoor education. I aimed to investigate high potential incidents and the actions that resulted through a case study of Rotoiti Lodge Outdoor Education Centre. Additionally, I aimed to ascertain meanings of the events for those involved and elucidate suitable mechanisms for their analysis for preventive purposes. The study affirms that HIPO incidents are indeed meaningful events for those that experience them and that they have significance for safety and preventive purposes. It also indicates that suitable mechanisms for incident analysis depend on conducive settings being established.

The thesis consists of four central topics embodied in the research objectives; the meanings of HIPO incidents for teachers and instructors including definitions, effects and significance; the possible causes of incidents and patterns common to several events; how incidents were processed; and procedures for incident reporting and analysis which would benefit a school's risk management plan. These provided the framework for the literature reviewed and the results chapters which followed. I reappraise the objectives next, summarising the most telling of the outcomes and drawing them together in a final analysis and evaluation. I then discuss implications of the findings. Lastly I consider future research needs before concluding the chapter and thesis.

9.2 Final evaluation of research objectives - Summary of main findings

9.2.1 Meanings of HIPO incidents

Meanings of HIPO incidents to respondents and others involved were explored in a three pronged approach encompassing in-depth examinations of definitions of related terms, effects the events had on those involved and attempting to determine the significance of events using a tool from industrial research.

9.2.1.1 Definitions

Respondents' definitions of accident and incident most resembled industrial rather than outdoor definitions in the literature, indicating outdoor definitions need revision, at least for the New Zealand context. Bird and Germain's definitions were endorsed as suitable with minor adjustments (highlighted) to reflect respondents' emphases:

ACCIDENT

- *An undesired event that results in ... harm to people, damage to property **and** loss to process.*

There are three parts to the definition:

1 *Does not limit human results to injury. Harm to people includes injury, illness and **death** as well as adverse **psychological and/or emotional** effects.*

2 *Does not confuse 'injury' with 'accident'. They are not the same. Injuries, illnesses and **death** result from accidents. But not all accidents result in injuries, illness or **death.** This distinction is critical. ... The severity of an injury that results from an accident is often a matter of chance. It depends on many factors, such as **reactions based on skills, dexterity and judgement.***

3 *If the event results in **property damage and process loss,** and no injury, it is still an accident. **Process loss alone does not constitute an accident.** Often, of course, accidents result in harm to people, property **and** process.* (Based on Bird & Germain, 1992, p. 18).

Respondents were aware that some incidents were very serious, more so than some accidents, so understood the concept of a HIPO incident and referred to these as 'near misses' or 'close calls'.

INCIDENT

- *An undesired event which, under slightly different circumstances, could have resulted in harm to people, damage to property **and** loss to process.*

  The incident is usually referred to as the "near accident" or "near miss." ... the incident is similar to an accident, but without injury or damage ... incidents are enormously important to safety. An incident with high potential for harm (HIPO) should be investigated as thoroughly as an accident. (Bird and Germain, 1992, pp. 19-20).

No definition for an outdoor epic was found in the outdoor literature, but approximately half the respondents understood the concept in the outdoor context, indicating the term was exclusive to the outdoors culture. Epics had several meanings according to the teachers and instructors, one of which was synonymous to a HIPO incident. The elements which contributed to this particular meaning were used to develop a framework for defining the term:

EPIC

A long, hard, strenuous outdoor trip, involving a chain of events that puts people in a reactive mode, pushing their limits so they feel out of control. It is a major, unforeseen event involving perceptions of high risk and adventure which creates stress. Memorable learning experiences that people survive, they are often glamorised afterwards, creating the 'epic'.

The HIPO incident took its place as a serious event and one manifestation of the outdoor epic story was finally seen for what it was, the reconstruction of a near miss, making the event visible whilst maintaining face in a culture quick to judge in hindsight whilst quick to revere heroic deeds. From this we can learn to listen carefully to epic stories told in outdoor education, for they may contain important learning points. We should also continue to create a culture in outdoor education where HIPO incidents are talked about openly and honestly and not judged but learned from.

9.2.1.2 Effects

Effects of HIPO incidents on those involved were profound, ranging from physical effects to effects on their feelings and emotions. The affective nature of HIPO incidents made them most memorable experiences for respondents indicating they were important events in their lives.

HIPO incidents had effects on the respect for, trust and confidence felt between colleagues, which was not always mutual or symmetrical. Experienced outdoor educators and instructors trusted and had confidence in each other but not their less experienced teacher colleagues. Teachers trusted and had confidence in each other and their more experienced colleagues, but not in parent or student assistants. So like trusted like and less experienced trusted more experienced, but the reverse of this was not always true. Instructors knowingly had to rely on inexperienced people for tasks and decisions critical to safety at times in the programme, due

to a lack of experienced staff. One instructor treated teachers and assistants as novices rather than extra staff when it came to calculating ratios. Mention of this issue was not found in the mostly American outdoor leadership literature examined, although it was found in pilot work for this research. An explanation could be that most outdoor leadership is carried out by professionals in the U.S. and consequently ignores the issues surrounding classroom teachers as outdoor leaders. This signals an area for future research and policy development.

The study revealed that although students involved in a HIPO incident were affected by it physically or emotionally, some did not realise the gravity of the situation. Whereas staff realised it was a serious near miss, they reported that students were more likely to think it was an adventure. Although identified in pilot work for this research, no mention of this difference between staff and student perception was found in the literature examined. Indeed no research examined, focused on students' perspectives of HIPO incidents or accidents. An unsafe act on the part of the student did feature in the literature and contributed to incidents in this study. Investigating student perspectives in future research may determine whether more astute student perceptions of risk lead to safer behaviour and therefore involvement in outdoor trips. For example, education campaigns targeting youth, on the dangers of drink and speed when driving are having a positive effect on reducing road deaths in that age category.

9.2.1.3 Significance

According to the results of this study, it is possible to measure the significance of an event using the Albrighton (1993) risk assessment model. Incidents scoring three or more on the matrix, like the eleven incidents in this study, should be investigated as thoroughly as an accident involving serious loss according to the literature. While the tool proved more reliable in determining seriousness than probability of events, it proved a reliable indicator of three plus events, so was useful in determining significant events for preventive purposes. Schools therefore, ought to consider using the tool to determine incidents which require reporting, analysis and remedial action.

9.2.2 Possible causes, patterns, structured analysis

Consistent with the literature, HIPO incidents in the study were the result of a multitude of factors. Some factors identified were common and significant causes in the literature such as

risk shift, familiarisation with the situation, get-home-itis, unsafe condition, judgement error (leader), unsafe act (student) and wild card factors. Other factors, derived from the data, included bad weather, particularly cold, responsibility misplaced with a student or staff member, pre-existing health condition, shortage of skilled staff, missing or failed gear, overweight and unfit student and poor hygiene. Considering the small sample, there was a surprising amount of overlap of causal factors, indicating many incidents have similar underlying causes which makes some areas for remedial action more identifiable.

Two models for structured incident analysis were examined. Fault tree analysis illustrated the complexity of a single event, suggesting incidents may be more difficult to manage and predict than initially thought and reinforcing the hindsight bias. The pathways to change model illustrated that, at least in hindsight, it appeared there were opportunities to intervene and block the incident's progression and hence mitigate losses. Additionally, it showed how incidents progressed through a number of stages and most could be traced back to factors which only management had control over. This reinforced a theme repeated often in the research, that a shortage of skilled and experienced outdoor staff at Rotoiti Lodge contributed to many incidents in the study. This was seen as the Trust's responsibility, as they had control over resourcing the Lodge, to ensure that appropriate national standards, including staffing, were met.

9.2.3 How HIPO incidents were processed

This study found that respondents processed events formally and informally. The most helpful methods of constructive reflection on an event were informal talking, formal debriefs at the Lodge, talking to family, self reflection, joking about it and recording it. The most conducive settings to processing events were described by respondents as an informal atmosphere although a formal process would be fine if the programme was busy. The people involved needed to be familiar with the debriefing process, within a culture that promoted reporting, discussion and sharing of incidents with a goal of acting on any recommendations and a minimum of paperwork. It would need to be a round table forum that was non-blaming, non hierarchical and non threatening which happened soon after the event and away from students. Respondent preferences for the types of settings where they could talk freely about incidents bore out successful reporting procedures in the literature. Where a climate of trust was

created, incidents were reported more readily, a better knowledge of what was not functioning correctly was achieved and they could learn from and act on their mistakes.

All those involved in incidents in the study were also involved in Lodge debriefs of the event. This was routine practice at the Lodge. This was a departure from a previous study where some respondents were excluded from any processing of an event back at school or there was simply no formal or informal debrief after the event. Those who missed out were usually outdoor instructors employed by the school for the specific camp only. These people, due to their experience would most likely have had a valuable input to make after a serious event. This signals an important area for policy development.

Incidents were used as examples to prepare students for subsequent Rotoiti camps. Respondents also modified their own behaviour and programme policy as a result of what they learned from incidents. This was salient evidence of the most important stage of the experiential learning cycle, where reflection was followed by application of the knowledge in new situations. This final stage afforded the programme and people the benefit of the considerable knowledge gained from incidents, identified as a crucial accident prevention measure in the literature.

9.2.4 Procedures for incident reporting and analysis beneficial to schools

The research results suggest that setting up incident reporting procedures would be beneficial to a school's risk management plan. Analysis procedures discussed may also be beneficial, particularly the pathways to change model, as it specifically identified intervention points and strategies to block incident progress as well as management control issues which the programme or school may need to address. Albrighton's (1993) risk assessment model was also thought to be useful for determining significant events which required further analysis and remedial action. In order to enjoy these benefits however, a conducive environment for constructive reflection on events first needed to be established in the school.

9.3 Implications of the findings

The research findings outlined above highlight some problems and solutions regarding incidents in outdoor education, elements of which have important implications for the management paradox regarding safety and risk. The implications concern Rotoiti Lodge

Outdoor Education Centre; school outdoor education in general; and future outdoor education research. There is some overlap between the first two categories.

9.3.1 Implications for Rotoiti Lodge Outdoor Education Centre

A recurring theme in the thesis was a lack of appropriately skilled and experienced staff to lead all groups in residence at the Lodge for the week. This situation contributed to many of the incidents in this study as it required outdoor educators and instructors to routinely rely on their less experienced colleagues and in some cases students for tasks critical to safety and led to teachers with limited skills and experience leading activities. If a HIPO incident occurred, teachers were pushed to their limits and sometimes beyond in an effort to resolve the incident, suffering high stress levels in the process. The implications of problems associated with staffing Rotoiti camps relate to the management challenge of balancing safety and risk. These are set out below.

1. The management committee of Rotoiti Lodge Outdoor Education Centre need to re-evaluate the experience, skills and training required of an outdoor leader of activities at Rotoiti Lodge. Specifically, constituent schools need to develop a structured leadership development programme, based on accepted national standards. These are outlined in the current Lodge Safety Manual (Haddock, 1996b). To ensure programme safety, teachers need to be 'locked' into levels of responsibilities/activities which are tied to their current logged training and experience.
2. Furthermore, each school needs to examine the culture surrounding outdoor education camp involvement, for social and professional pressures on staff to accept leadership roles where appropriate experience and skills are absent. The balance needs to shift from teachers with a lack of experience being encouraged and expected to lead trips, to staff being encouraged and supported towards attaining appropriate experience, skills and training for the job which needs to be compliant with current outdoor industry standards (outlined in Watts, 1996 and Haddock, 1996a).
3. Before a group arrives at camp, staff who can adequately meet the leadership requirements of programmed activities need to be allocated. If this is not possible within the current staff of the school, outside specialists could be contracted to work on the camp or programme activities curtailed to match staff experience and skills. Resident teachers should not be put

in the position of arguing for these baseline standards each week with a group, rather there need to be agreed policies between constituent schools which all are bound to adhere to.

4. Given the current emphasis on adventure activities in Lodge programmes, the Trust should seriously consider employing four resident outdoor educators to lead activities so all schools can be confident of appropriately skilled and experienced leaders for their four groups each week. This will enable staff to build up important local knowledge of the programme activities, activity sites and seasonal weather conditions which all impact on the balance between safety and risk. It will also eradicate the need for reliance on inexperienced staff to carry out responsibilities which are critical to safety but beyond their level of competence.
5. A vote of confidence in the incident reporting culture and systems established at Rotoiti Lodge is due. Schools would do well to emulate and build on these in other outdoor programmes they run if they haven't already. Refinements to the Lodge and school incident reporting procedures would be to introduce the use of Albrighton's (1993) risk assessment model to determine significant events requiring further analysis and remedial action. The pathways to change model is also recommended for its usefulness in identifying intervention points and strategies to block incident progress as well as management control issues the Trust or constituent school may need to address.

9.3.2 Implications for school outdoor education

Those responsible for the management and administration of outdoor education programmes are increasingly under financial pressure to make school programmes cost effective. This is at a time when professionalism in outdoor leadership and standards of accountability for outdoor safety have never been higher. Ameliorating these pressures is a necessary but huge challenge, if outdoor programmes are to be maintained at current levels. Programme curtailment in line with teachers' outdoor competence is another choice. Or, schools could wait for the inevitable outdoor education disaster to necessitate acting on these issues. A proactive approach is recommended in favour of the reactive.

1. Managers of school outdoor education programmes need to evaluate the experience, skills and training required of a leader for their programmed outdoor activities. Specifically, schools need to develop a structured leadership development programme, based on accepted national standards (as outlined in Watts, 1996, or other appropriate publications),

with teachers 'locked' into levels of responsibilities/ activities which are tied to their current logged training and experience.

2. Furthermore, schools need to examine the culture surrounding outdoor education programme involvement, for social and professional pressures on staff to accept leadership roles where appropriate experience and skills are absent. The balance needs to shift from teachers with a lack of experience being encouraged and expected to lead trips, to staff being encouraged and supported towards attaining appropriate experience, skills and training for the job which meets current outdoor industry standards.
3. Current Ministry of Education policy in outdoor education may need to be scrutinised for the extent to which it addresses issues surrounding teachers as outdoor leaders. Specifically, have support systems been put in place and appropriate funding made available which enable schools to provide effective outdoor leadership that meets current outdoor industry standards? Legislators and educational policy makers may need to revise resource allocation and design suitable processes within the education system which facilitate the above.
4. At the planning stage of outdoor education activities, staff need to be selected who adequately meet leadership requirements. If this is not possible within the current staff of the school, the programme should be curtailed to match staff experience and skills or outdoor specialists contracted to support the programme.
5. Schools need to recognise the significance of incidents, particularly HIPO incidents in their outdoor programmes.
6. Given the benefits to safety of having incident and accident reporting and analysis procedures in place and the fact that they are a statutory requirement, school outdoor education programmes would do well to set these up. But as the success of such procedures depends heavily on a conducive environment, this needs to be established in the school as well. A culture needs to be created where it is okay to talk about these events openly and honestly with all involved. Components would need to include those discussed in section 9.2.3.
7. If a school contracts outdoor instructors to work on programmes, these people need to be involved in the programme planning and incident reporting procedures also.
8. School outdoor education programmes ought to consider using Albrighton's (1993) risk assessment model to determine incidents which require reporting, analysis and remedial action. Additionally, they should consider using the pathways for change model to assist in

identifying intervention strategies to block event progress and identify management issues they may need to address.

9.3.3 Implications for outdoor education research

Very few studies have focused on incidents, especially in outdoor education. Such studies are needed on the basis that it is very difficult to manage problems when local issues have not been identified. Whereas New Zealand classroom teachers have traditionally worked in outdoor education programmes, in the United States the job is mainly done by professionals. The New Zealand situation creates safety issues in outdoor programmes which are absent from the mainly American literature. So New Zealand researchers cannot assume that issues raised in the literature apply to New Zealand or that all important issues concerning a topic in outdoor education are contained in the existing literature.

Although outdoor education research is scant in this country and a vast amount on many topics is required to build up a picture of the local situation, I have identified several topics for further research as a result of the present work.

1. An increased understanding of teachers as outdoor leaders. It is clear that some teachers who lead outdoor education activities, have a skill level which is inadequate for the programme and environment. They are therefore not fully aware of the risks they are taking. While they may learn substantially from their epics, the question begged is should they be learning whilst in charge of students in a demanding environment such as the outdoors? How did become outdoor leaders? On what basis - training / experience? A comparative study of the experience, training, skills and qualifications teachers have, compared to professional outdoor instructors with similar responsibilities, may supply answers to the above questions. This may be achieved by surveying a random sample of teachers and instructors from a variety of areas throughout New Zealand, supplemented by some interviews and focus groups.
2. A related and intriguing area to that in number 1 would be a qualitative investigation and analysis of the social and professional pressures on teachers to lead outdoor education trips and activities. Also, what socio-professional climate exists in the outdoor education setting, where perceptions of preparedness for the task of leadership fall so far short of the requirements? These may include:

- guilt feelings if students are to miss out if they do not lead
- fear of being thought incompetent if admit feeling uncomfortable about leading
- obligation to school to lead since they already pay you and hiring a professional will cost extra money which the school either does not have or has higher priorities for
- pressure of tradition - teachers have led outdoor activities in the past
- fear that outdoor education will die in schools if all who lead need specified experience and training
- reluctance to stay home when sick or disclose sickness on camp as this may mean students miss out
- ethic (and expectation) of involvement in extra curricular activities eg drama production, camp, sport

3. An area, related to the above two, would be a qualitative study comparing experts' and novices' abilities to resolve HIPO incidents or serious accidents in the outdoors.
4. An investigation of meanings of HIPO incidents for students who have experienced them in order to compare these with meanings for staff. Test if students are more likely to conceptualise a HIPO incident as an adventure. Also examine student perspectives of risk taking and if these bear on their propensity to perform unsafe acts in the outdoors (a significant cause of accidents in the literature).
5. An investigation of the effects of HIPO incidents on victims, their families and community.
6. An in-depth examination of the outdoor epic to answer the question 'is the epic synonymous with a HIPO incident experience or is it the reconstruction of the event into an embellished adventure story, heroic in nature?'. In other words, is an epic the *experience* or the *story*? or both?
7. An in-depth investigation of the positive outcomes of HIPO incidents and serious accidents. Specifically try to increase understanding of the extent to which HIPO incidents or epics are a training ground for outdoor instructors and leaders, and the appropriateness of this.
8. An investigation of the ideas of teachers and instructors regarding an acceptable level of risk in outdoor education. Examine these in terms of society's standards.
9. A survey of the number of outdoor education camps and activities held in New Zealand annually and the number of staff and students involved. This would provide an excellent baseline and background for all outdoor education research.

9.4 Conclusion

The nature of outdoor education means that safety and risk are intertwined in the experience. In the quest for positive outcomes of risk such as adventure and challenge, outdoor education experiences will inevitably brush with the negative consequences of risk, accidents and incidents. The outdoor leader plays a vital role in balancing safety and risk, with leader competence inextricably linked to safety.

Incidents with high potential for harm afford an opportunity to analyse these dynamics without the emotionally charged situation of a death to tiptoe around. Against a background of having got away with it, the meanings of these events have been examined along with how the incident was processed. Contributing factors were analysed on a micro and macro scale and the significance of events estimated. Focusing on these topics in a specific case study organisation has gone some way to address the broader issue of risk management in outdoor education in New Zealand schools.

The study has indicated that the provision of sound risk management is difficult as schools live through a period of change involving economic pressures and an analogous increase in professionalism and safety standards in the wider outdoor industry. It appears that schools have been unable to keep up with these developments, specifically, failing to ensure that outdoor education programmes are staffed at a level which meets current outdoor industry standards. Traditional management approaches to outdoor education have been shown to contribute to HIPO incidents in this study. In a climate of increased accountability for safety across industry sectors, these approaches are outdated and I am not the first to signal this to schools. These issues pose a most significant challenge to managers of school outdoor education programmes and education policy makers alike.

A new era in the evolution of outdoor education in schools has been unfolding with the use of specialist outdoor educators and instructors on school camps. While it is acknowledged that employing specialists to support programmes is unlikely to lead to the eradication of HIPO incidents, as these are very common occurrences, trained and experienced outdoor instructors are in a better position to resolve incidents. Due to unconscious competence in their activity and crisis management skills, the outcomes of events which do occur are likely to be reduced.

In addition, programme safety is not compromised by inexperienced staff being routinely relied upon to carry out tasks that are critical to safety.

Principals and Boards of Trustees must be careful to assess the competence of their staff against responsibilities in outdoor education. It is vitally important that staff are encouraged and supported in the development of their skills and experience for leading outdoor activities as in other curriculum areas, rather than expected or pressured to lead activities beyond their abilities. Or, options can be investigated for hiring specialist outdoor staff to support programmes where necessary. Such alternatives to traditional approaches may be possible by reassessing and re-allocating current school resources and priorities. But informed government intervention and support would ensure more streamlined and sustainable changes which meet current industry standards. These measures will go a long way to strengthening existing outdoor education programmes and indeed ensuring their survival. The prime beneficiaries would be students, their parents, teachers, school outdoor education programmes and their staff and New Zealand society at large.

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APPENDICES

APPENDIX I *Case study*

This is based on an actual incident which occurred. On the first night of camp, the staff decided to take the students outside to play spotlight. They all went outside at about 9.30pm, the students were counted as they passed out the door. 42 students went out to play. There was a deaf student amongst the group, and he went out as well. All students were buddied up, including the deaf student. After an hour of playing the game, the van horn was tooted which was the arranged signal that the game was over and it was time for everyone to come back inside. There was a count of the kids coming back in the door and only 41 returned. At 10.30 at night, they realised that the deaf student had not come back. So, the students were all paired up to go out and look for the deaf student. Several students were questioned about his last known whereabouts etc. The last place that the student was seen was the first place that was searched. All the students went out in pairs, 4 or 5 staff and parents went out also and a staff member looked after the whole show back at base (the Lodge). After another hour of the students and staff searching with torches and shouting the boy's name, the horn went again to get everybody back in. There was still no show of the deaf student, and four more students did not return from the search. Staff searched for these students for another 20 minutes, found them, and brought them back to the Lodge. It was the middle of winter, with snow around on the ground, but a fine clear night. At midnight, the Resident Teachers were phoned to come up and assist.

Outcome

The resident teachers arrived at the Lodge at 12.10pm to find that the student had walked out of the bush and into the Lodge by himself. He had thought that the game was still going during the search, so continued to hide. Once the lights went out in the Lodge hall, he figured the game was over, so came back in.

APPENDIX II *Risk assessment model*

Albrighton's (1993) risk assessment model ranks the probability and seriousness of events in order to produce a risk factor. Thus the significance of individual events may be estimated.

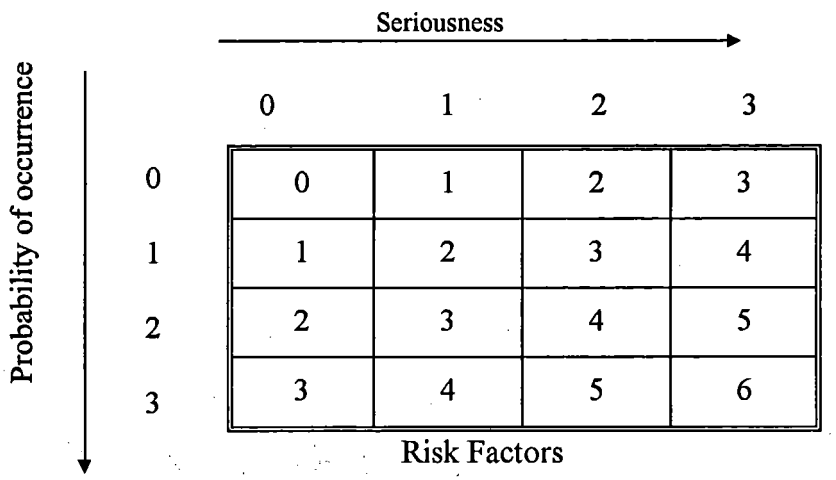

Figure 1.1 *Risk Assessment Model.* (Albrighton, 1993:18).

DESCRIPTORS FOR MODEL

Probability Ranking Points:		*Seriousness:*	
0	*Very unlikely*	*0*	*Of no consequence*
1	*Slight possibility*	*1*	*Marginal*
2	*Medium possibility*	*2*	*Quite serious*
3	*Highly possible*	*3*	*Catastrophic*

Probability Points + Seriousness Points = Risk Factor

Albrighton (1993) recommended that an incident with a risk factor of three or more should generate further investigation, analysis and corrective action. Incidents with a risk factor of three or more were the focus of this study.

APPENDIX III Research procedures

The following is an outline of information gathering procedures used for the study, including interview questions and topics discussed.

In-depth interviews:

Flow of interview.

Briefing. Thanks for agreeing to be a respondent for my study. The information gained from this interview will assist me to investigate how safety and risk management procedures in outdoor education can be improved.

1. I am interested in understanding more about incidents which happen here at Rotoiti, in order to prevent similar recurrences. I am not interested in attributing blame. I have incidents myself, they are a common phenomenon.
2. This is an informed consent document, to let you know what will happen to the information gained from the interview, and that you can withdraw from the study if you wish. Can you read it now, and then we can both sign it. This is your copy to keep.
3. I am interested in an incident you have experienced in the last two and a half years, which had high potential for serious harm.
4. Do you mind if I audio-tape the interview?
5. The interview will then be conducted.

Interview Schedule.

* How would you define an accident, incident, epic?
* Would you tell me the story of a high potential incident you have experienced whilst leading or co-leading an activity at the Lodge? What happened, including events leading up the incident which may have occurred well before the actual incident itself? When did it occur?
* What was the meaning of that incident for you?
  Can you describe your feelings, physical state, emotional state whilst dealing with the incident?
  How did it affect your leadership?
  How has/will it affect your involvement in outdoor education?
  What did others say? What did others do during the incident?
* What did you learn from the experience?
* What do you believe were the possible contributing factors to the incident?
* What did you say after the incident? What did you do after the incident? How was the incident 'processed' (formally, informally)?
* How are these sorts of events debriefed officially, at the Lodge, at school?
  How have you processed this event personally, professionally so far?
* What processes were helpful in your view? Who helped?
* Can you describe how comfortable you felt talking about the event afterwards?
* What sorts of settings did you feel were conducive to discussing the incident and which were not?

* What knowledge, if any, that was gained from the event, was or will be transferred to prevent future similar events?
* Rate the incident using the Albrighton risk assessment model.

Debriefing. During the debriefing stage of the interview, I allowed time for 'even keeling' (sharing an experience of an incident I had experienced). This was intended to finish the interview on more of an 'even keel' than if the respondent only had made her/himself vulnerable. Then a topic of mutual interest was discussed before terminating the interview.

Focus Groups:

Each focus group involved three to six staff from the school in residence at the Lodge. Discussions were audio-taped and transcribed.

Briefing. Similar to that for in-depth interviews.

Topics for Focus Groups

* Define an accident, incident, epic.
* What meanings are associated with incidents?
* How, in your experience, are these events processed (analysed / debriefed) afterwards? Formal ways, informal ways.
* What happens to the information surrounding these events?
* What sorts of settings, are conducive to constructive reflection on an event? Which are not?
* Case study to discuss and rate using the Albrighton risk assessment model (to be developed from themes which emerge from earlier interviews).

Debriefing Thank everyone for their participation. Have a cup of tea and informal chat together.

APPENDIX IV ***Informed consent form***

I am currently undertaking research work for my Master of Applied Science Degree in the Department of Human & Leisure Sciences at Lincoln University.

You are invited to participate in a study which investigates incidents with high potential for harm in outdoor education and the actions that result from them. The research attempts to determine incident analysis procedures that could enhance safety in the programme, and assist schools to comply with the Health and Safety in Employment Act, 1992.

Your participation could include being interviewed or being involved in a focus group discussion. I also wish to let you know that you may withdraw your consent to participate in this research or your consent to have any of the information obtained from you used in any written reports in this research, up until August 31, 1997 when I begin the data analysis.

I undertake to ensure your confidentiality in the following ways. I will not let any person listen to tapes or see transcripts of observations and interviews, other than a research assistant, myself and my supervisors, unless I have your written permission. These transcripts and tapes will not identify you or your school. I will not publish any information gained from observations and interviews whether as research paper/thesis or in other academic media except in the form of extracts, pseudonymously identified, or in the form of numerical data.

Thank you very much for your help in my study. If you have any concerns or queries, please discuss with me or contact my supervisors.

Cathye Haddock
Postgraduate student

Supervisors:

Dr Pat Devlin
Pip Lynch
Department of Human & Leisure Sciences
P.O. Box 84
Lincoln University, Canterbury.
Tel: (03) 325 2811

I have read and understood the above and on this basis I agree to participate as a respondent in the project. I consent to publication of the results with the understanding that my identity will remain confidential. I understand that I may withdraw from the project up until August 31, 1997 (including withdrawal of any information I have provided).

Signed: .....

Date: .....